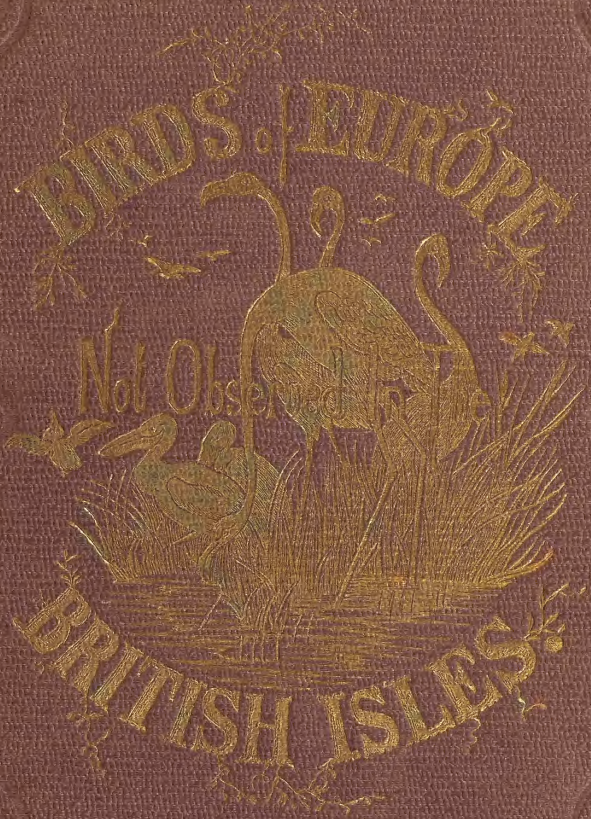
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RUFFED BUSTARD.

A

HISTORY

OF THE

BIRDS OF EUROPE,

NOT OBSERVED IN THE BRITISH ISLES.

BY C. R. BREE, ESQ., M.D, F.L.S.,

Author of "Species Not Transmutable,"
Physician to the Essex and Colchester Hospital, &c., &c.

VOL. IV.

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BIRDS OF EUROPE,

NOT OBSERVED IN THE BRITISH ISLES.

ORDER XI.—ALECTORIDES.

Family GLAREOLIDÆ. (Bonaparte.)

Genus GLAREOLA.

Generic Characters.—Beak short, convex, compressed towards the point; the upper mandible curved the distal half of its length, without being notched. Nostrils basal, lateral, and obliquely pierced. Legs bare for a short space above the knee; tarsi long and rather slender; three toes in front and one behind, the middle one being united to the exterior by a short membrane: the interior toe free, the posterior toe articulated upon the tarsus. Wings very long, the first primary much longer than the others.

PALLAS'S PRATINCOLE.

Glareola pallasii.

Glareola pallasii,	BRUCH. SCHLEGEL; Revue, 1844.
" *pratincola,*	PALLAS; Zoog. 1811, pl. 2.
" *melanoptera,*	NORDMANN; Bulletin de Mosc. 1842, pl. 2, p. 314.
" *nordmanii,*	FISCHER.

Specific Characters.—The under wing coverts of a uniform smoky black. Length (French measure) nine inches six lines; wings three inches eight lines; external tail feathers three inches eight lines; middle tail feathers two inches three lines; tarsus one inch five lines; middle toe eight lines; claw of middle toe three lines; beak from gape ten lines; depth of two mandibles, through the nostrils, two lines and a half.—Schlegel.

This bird, which is considered specifically distinct from the Pratincole of the British lists, is found in Greece and Bessarabia more plentifully than its congener. According to Pallas, who first described the species in his "Zoography," it is very common from April to the autumn in the deserts of Tartary, from the Volga to the Irtin.

Schlegel, in his "Revue," p. 91, gives a lengthened account of this bird, in which he says it is at once distinguished from *G. pratincola* (Linnæus) by the following characters:—The beak is thinner, shorter, and curved; the tarsi are longer, and the toes shorter; the tail is shorter, and it only has the extremities of the elongated feathers black; the throat is white, and the wings underneath are of a uniform smoky black, while in *G. pratincola* these parts are of a lively russet brown. This latter characteristic led Professor Nordmann to call it *Glareola melanoptera*, which Fischer tried to improve by converting into *G. nordmanii*.

This bird is evidently a local race, or permanent variety, like many others which I have been called upon to treat of in this work. Pallas tells us that it is always found in small flocks, congregating more numerously after the breeding-season. It never frequents water, but is always found in arid (especially salt) plains, where it seeks gryllæ and other insects.

It runs as fast as a plover, and is equally afraid of man. It flies away when flushed, uttering the cry 'tirek-tirik,' like a Tern. It migrates early to the south.

It differs so little in plumage from the well-known Pratincole, that I have not thought it necessary to give a figure, and I have stated all the points in which it diverges structurally or ornamentally from that bird.

It is figured by Pallas, Zoog. pl. 2; and by Nordmann, in the Bulletin of Moscow, 1842, pl. 2.

Order XII.—CURSORES.

Family OTIDIDÆ. (Bonaparte.)

Genus Otis. *(Linnæus.)*

Generic Characters.—Beak shorter, or not exceeding the length of the head, straight, conic, compressed, the point of the upper mandible curved. Nostrils oval, open, lateral, and a little removed from the base. Feet long, naked above the knee. Three toes, all in front, short, united at the base, and bordered with a membrane. Wings middle sized, the first quill half the length and the second rather shorter than the third, which is the longest in the wing.

RUFFED BUSTARD.

Otis hubara.

Otis hubara,	Gmelin.
" " *expodotus undulata,*	Brisson.
" *undulata,*	Jacquin.
Chlamydotis houbara,	Lesson.
Hubara undulata,	Bonaparte.
Outarde houbara,	Of the French.
Kragentrappe,	Of the Germans.

Specific Characters.—Beak long and much depressed at the base; a crest of white feathers on the vertex, and a long and strong mass of brownish black and white feathers hanging as a pendant from the back of the neck on each side. Length twenty-four inches; from carpus to tip fourteen inches; tarsus four inches; middle toe two inches; beak two inches and one tenth.

The Ruffed Bustard, or, as it was also called by Latham, the Undulated Trumpeter, is only an accidental visitor in Europe. It is however found wandering from its African home into Spain, Portugal, Silesia, Dalmatia, Turkey, Greece, Germany, Switzerland, and Belgium. It is found especially in the north of Africa, being common in the plains between the mountains and the coast in the neighbourhood of Tripoli, Tunis, and Constantine. Mr. Tristram says it occurs throughout the Sahara, but becomes rare in the south, though most abundant about the Dayats, and to the edge of the Chebkha M'zab. It is also found in Arabia.

In the first volume of the "Ibis," page 284, Mr. Tristram has given a most interesting account of the Houbara, or, as Temminck tells us we ought to spell it, the Hubara Bustard, and he has gone at some length into details of Falconry as pursued by the Arabs. I will make no apology for quoting the following long extract from this graphic and interesting description. The Saker Falcon, which Mr. Tristram says is found more in the desert, and the Lanner Falcon, (Ibis, first volume of the work,) are those which are chiefly used by the Arab sportsmen; and they prize them so highly that Mr. Tristram offered in vain £40 for a live specimen. I will let him however speak in his own words:—

"The Arab Sheiks pursue the sport of Falconry with all the zeal, skill, and science of the 'noble mysterie' of our ancestors. The villein who presumed to raise his head against the king's deer was not more certain of condign punishment from the Norman, than the plebeian Sehaur who should dare to cast a hawk in the Sahara. No Aga or Sheik of high degree ever moves for war, business, or pleasure unattended by his falconers, who are his confidential lieutenants. The care of three

Falcons is considered sufficient employment for one falconer with an assistant; and on the march one or two of these important personages follow, mounted immediately behind the Sheik, with a hooded Falcon on the wrist, and one perched on each shoulder. The Houbara Bustard is the favourite quarry; but Eagles, Kites, Sand Grouse, (and in the case of the Saker Falcon, the gazelle,) afford equal sport to the huntsman.

"When a Bustard is descried, the whole cavalcade instantly halt; the Hawk on the wrist is transferred to the hand of his master, who, attended by his falconers alone, instantly sets off, and unhooding his bird, *throws* him from his wrist towards the Bustard. Much skill is exercised in drawing the attention of the Falcon to the Bustard before it rises. Should it unfortunately take wing before its pursuer has poised herself above it, an ill-trained or impetuous bird is very apt to strike it in the air. This, according to the view of your desert connoisseur, is a most unpardonable and unsportsman-like offence, to be punished with death. A skilful Hawk will at once rise to a considerable height, thence swooping down, make feints until the Bustard takes to its legs instead of its wings. The Falcon then poises herself over it, while a second is flung off the wrist, and the two together give chase, the speed of the Houbara being such that a fleet Arab can scarcely keep up with the pursuit.

"The poor bird runs along, aiding its speed by a perpetual fanning with its wings, its head stretched forward like a Corncrake's, and its conspicuous black and white ruff folded closely back over its neck—a pitiable contrast to the proud fellow who was lately strutting with head erect, elevated crest, and expanded

ruff, challenging all comers. The pursuers hang over him—only a few yards above him; and at each effort he makes to take wing, swoop down with a feint. It is considered the excellency of a Falcon to make these feints at the quarry until it is nearly exhausted, when the fatal swoop is made, and the bird instantly drops, struck dead by the hind claw having pierced its spine. This manner of hunting is probably practised both to afford more prolonged excitement to the horseman, but chiefly from the mode of self-defence adopted by the Houbara, and which I have had various opportunities of observing myself. As the Hawk approaches, the Houbara ejects both from the mouth and vent a slimy fluid. A well-trained bird eludes this shower by repeated feints until the quarry's supply of moisture is exhausted; an impatient one rushes in and gets his feathers and whole plumage so bedaubed, that his flight is materially impeded, and his swoop, when made, is irresolute."

"With a leash of Falcons, two Haggards, and a Tiercell Saker, I have known three Houbaras and a Sand Grouse or two captured in a day, and the chase was terminated merely on account of the fatigue of the horses. I was never actually present at the chase of the gazelle, but it is very commonly practised, and I have seen a gazelle brought into camp that had been so taken. This sport, however, requires more birds, and is very dangerous to the Falcons, who frequently impale themselves on the horns of their prey. It is not uncommon for both pursuer and victim to fall dead at one mutual stroke."

The Ruffed Bustard, like the rest of the family, is a shy bird, frequenting the wild desert, and rarely coming near a human dwelling, or where it is likely

to meet with an enemy. In the spring the males have grand battles with each other for the possession of the females, asserting and maintaining their right to have a plurality of wives, in which combats the older birds are generally victorious.

The females scrape a hole in the sand, in which Mr. Tristram says they lay three, sometimes only two, eggs. They will desert the nest if it is disturbed during incubation. Degland and some other writers give five as the maximum number of eggs. The young when born are covered with down, and immediately, like other gallinaceous birds, follow their mother in search of food.

The Bustard is both granivorous and insectivorous. According to some authors they will feed also upon frogs, toads, and lizards; and M. Jules Verreaux informs us that in Africa he has often seen them kill and eat snakes. In the combat they principally make use of their wings, killing their prey by violent blows.

The male has the top of the head white, the feathers being prolonged into a crest, which is bordered on each side by elongated feathers of a russet brown, spotted with black. Sides of the head, throat, and upper part of the neck, and nape, grey, the last being partly hidden by the elongated feathers of the crest. From the back of the neck extends on each side long stiff feathers, above black, below white, forming a ruff. The rest of the upper parts, namely, scapularies, back, upper wing and tail coverts, and upper tail feathers, russet brown, barred and crossed with darker brown; the tints varying from light brown on the back to greyish brown on the shoulders and lower part of the wing coverts, and to dark russet on the upper tail feathers; primaries, the first four white, with about

four inches and a half of the distal extremities of the first two, and three inches of the third and fourth black brown; the outer web of the first spotted cream-colour; the rest of the primaries dark brown black, tipped with white; secondaries dark brown black. Lower part of the neck, abdomen, and under wing coverts, pure white, the shoulders russet and brown; under tail coverts whitish, with dots and zigzags of russet and brown on the distal half. Tail feathers below cream-colour, shaded with russet, and marked with brown spots, and barred with three broad black bands; above they are barred alternately with black and dark russet; the end light cream-colour. Beak brownish grey; feet greenish; iris colourless.

The female differs but little from the male. It is rather smaller, and the colours are less lively. According to De Fontaine, ("Memoires de l' Academie des Sciences, 1787,") she carries like him a crest and a ruff; but Temminck says she has neither; the head and top of the neck whitish, starred with brown spots; the feathers of the ruff are short and silky; the front of the neck russet, with small spots and zigzags of brown.

Young males. Feathers of the crest shorter, with the delicate ash-coloured streaks, and russet towards their extremities; the black and white feathers of the ruff of equal length, varied with brown and whitish; back and wings isabelle red, varied with brown zigzags and black spots; front of the neck russet, also varied with brown zigzags.—(Degland.)

My figures of this bird and its egg are from specimens kindly sent me by Mr. Tristram. The former is from the Lesser Sahara, and is marked June 7th., 1856.

It has also been figured by Naumann, pl. 170, and Gould, pl. 268.

Order XIII.—GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)

Genus Charadrius. *(Linnæus.)*

Generic Characters.—Beak shorter than the head, slender, straight, compressed at its base, and swollen at its point; nasal furrow prolonged for two thirds of its length. Nostrils basal, lateral, linear, longitudinally cleft in the membrane of the furrow. Feet long, or of moderate length, slender; three toes all in front, the outer slightly connected at the base to the middle toe by a membrane; the internal one free. Tail slightly rounded or square. Wings middle sized,—the first quill slightly shorter than the second, which is the longest in the wing.

SPUR-WINGED PLOVER.

Charadrius spinosus.

Charadrius spinosus,	Linnæus; 1766.
" *ventralis,*	Wagler.
" *duvauceli,*	Lesson.
Pluvialis senegalis armata,	Brisson.
Hoplopterus spinosus,	Bonaparte. Hasselquist.
" "	Keyserling et Blasius.
Vanellus melasomus,	Swainson.
Pluvier armé commun,	Of the French.
Gemeiner Spornkiebietz,	Of the Germans.

Specific Characters.—Hair brown on the back; the pitchy black feathers of the occiput elongated into a crest; all the primaries

SPUR-WINGED PLOVER.

pitchy black; a sharp strong spur on each carpal joint. Length eleven inches; from carpal joint to tip of wing eight inches; tarsus two inches and a half; beak one inch and one fifth; tail three inches and a half.

The European localities of the Spur-winged Plover are Turkey, Greece, Russia, and occasionally Italy. M. Nordmann records having shot a male out of a flock of eight or ten, near Odessa, in 1837, in company with a large flock of the Sociable Plover, *Vanellus gregarius*. In Africa it has a long range. It is very common in Senegal, whence it derives the name given to it by Brisson. Mr. Taylor (Ibis, vol. i., p. 58,) says it is about the commonest bird in Egypt, and very tame. I do not find it included in Captain Loche's "Catalogue of the Avifauna of Algeria." In Asia we have it recorded by Mr. Tristram, in "Notes on Birds Observed in Southern Palestine," (Ibis, vol. i., p. 36,) two specimens having been seen on the banks of the Jordan. Captain Irby (Ibis, vol. iii., p. 237,) mentions the occurrence of this bird commonly on the sandy banks and shores of the Gogra and Choka in India, where he says he has frequently seen it sitting on the backs of the crocodiles and gavials. Mr. Taylor has recorded a similar interesting fact of an allied species, *Pluvianus ægyptius*.

Edwards has figured this bird as the Black-breasted Indian Plover, pl. 47; and under its right designation as the Spur-winged Plover, pl. 280. Latham also described what he considered a variety of the Spur-winged Plover, assigning Edwards' No. 47 to the male, and his 280 to the female. Dr. Adams does not mention this bird among the "Birds of Cashmere."

Temminck suggests the probability of the Spur-winged

Plover breeding in the south of Russia, but I am not aware of any nests having been found there.

The egg which I have figured was taken by Mr. Tristram himself, at Boulac, Egypt. Mr. Tristram has kindly added the following remarks from his notes:—"I took the nest of *Vanellus spinosus*, in a field on the hill opposite Boulac, on March 1st., 1858. The field was fallow, and the four eggs laid after the manner of the Lapwings, on the bare ground, in a slight depression. The bird, which had not begun to sit, ran a few yards straight from her eggs, and then, after the manner of the Lapwing, feigned lameness, and vociferously repeated its shrill note, which is much more sharp and harsh than that of our Lapwing. Finding that I continued to search about the spot where I had at first detected her, she took to her wings, and kept tumbling over head just in front of me; and in a few minutes was joined by her mate, who vehemently seconded her efforts to draw me onwards.

"The habits of this bird in every respect resemble those of its English congener; but it is more easy of approach, probably from being less persecuted. It is one of the most abundant birds on the cultivated banks of the Nile, several pairs being found in every field."

I copy the following from Bädeker:—"The nest is placed in a hole in the sand, either in an island or field. It lays from three to six eggs: these are one inch three lines long, and about an inch broad. The ground-colour, difficult to describe, is mixed up with green, grey, and yellow. This ground-colour is covered with black and dark brown spots, which only at the point leave the ground-colour free, while they

entirely cover the thick end. The bird leaves the nest at the approach of man, with shrill screams, and flies, like the Lapwing, round the intruder. In some nests I found damp earth in layers between the eggs, or covered with it to conceal them. The young birds resemble the old ones, even in their nest plumage."

The Spur-winged Plover has the top of the head, throat, neck, abdomen, primary wing feathers and end of tail black; sides of the head, nape, rump, under wing and tail coverts, shoulders, and lower part of abdomen pure white; back and wing coverts light brown; beak and feet black; iris deep red. The plumage, according to M. Temminck, is alike in both sexes.

My figure is taken from a specimen from Egypt, kindly sent me by Mr. Tristram, and was killed in March, 1858.

It has also been figured by Brisson, vol. v, pl. 7, fig. 2; Savigny, Egypte, pl. 6, fig. 3; Gould, B. of E., pl. 293.

GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)

Genus CHARADRIUS. *(Linnæus.)*

BLACK-HEADED PLOVER.

Charadrius ægyptius.

Charadrius ægyptius,	HASSELQUIST; 1752.
" *melanocephalus,*	GMELIN; Syst., 1788.
" *chlorocephalus,*	VIEILLOT; Gal. Ois. pl. 233.
Pluvianus ægyptius,	HARTLAUB; Ornith. West Africas, p. 209.
Cursorius charadrioides,	WAGLER.
Ammoptila charadrioides,	SWAINSON; Classification of Birds, p. 364.
Cheilodromas melanocephalus,	RÜPPELL; Mus. Senkenb.
Pluvian du Senegal,	BUFFON.
" *melanocephale,*	OF THE FRENCH.

Specific Characters.—Primaries white, with the base and apex black; secondaries white, with the apex black; scapularies as long as the longest primary. Length, from tip of beak to end of tail, nine inches; wings five inches and three fifths; tail two inches and seven tenths. Beak from forehead three fifths, from rictus four fifths of an inch; tarsi one inch and three fifths; middle toe and claw one inch.

THIS bird inhabits Egypt and Senegal, but it is, according to authors, occasionally found in Europe. Degland says that it has been captured in the south

BLACK-HEADED PLOVER.

of France; and M. Crespon, in the "Faune Meridionale," mentions a female having been killed by M. Lebrun, in Herault, on the 20th. of November, 1840. Hartlaub gives Spain as a locality.

There is no doubt, however, that it is extremely rare as a European species, and I only introduce it as an accidental visitor, and because it ought to be well known to ornithologists, should it turn up more frequently in the south of Europe.

The Rev. E. Cavendish Taylor kindly informs me it is very common in Egypt; where, however, it confines itself to the shores and sand banks of the Nile, from which it seems to derive its food. Captain Loche says it occurs only accidentally in Algeria.

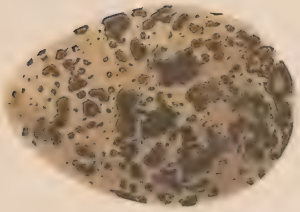
Mr. Taylor says that he generally found it paired in the months of December and January. It was very tame, and when it rose uttered a loud shrill note, from which both it and *Ch. spinosus* are called by the Arabs Zic Zac. The flesh dark coloured, and not very good eating.

In the "Ibis," vol. i, p. 52, Mr. Taylor, in his "Reminiscence of Egypt," has the following note about this bird:—"I did not see this very pretty species below Cairo, but above I found it very numerous. Irides dark brown; legs and feet pale blue; toes three in number. This bird enjoys the credit of being the *trochilos* of Herodotus, which he mentions as living on such terms of intimacy with the crocodile. The account which that veracious historian gives of the *entente cordiale* between these apparently ill-assorted allies, is as follows:—'As the crocodile lives chiefly on the river, it has the inside of its mouth constantly covered with leeches; hence it happens that while all other birds and beasts avoid it, with the *trochilos* it

lives at peace, since it owes much to that bird; for the crocodile, when he leaves the water, and comes out upon the land, is in the habit of lying with his mouth wide open, facing the western breeze; at such times the *trochilos* goes into his mouth and devours the leeches. This benefits the crocodile, who is pleased, and takes care not to hurt the *trochilos*.'—Herod. book ii, end of chap. viii. As a matter of fact I seldom saw a crocodile on land without seeing a *Pluvianus ægyptius* near him."

The following is from Bädeker:—"This inhabitant of Egypt has also been shot on the Guadalquiver, and in other places in the south of Europe. It breeds on the sandy islands of the Nile. It scratches a hole in the sand or gravel, and lays four eggs therein. These are very difficult to find, as the vigilant bird, when it observes the approach of man, covers them over before it leaves the nest. The shell is of a dull glaze-red yellow ground colour, with violet grey spots and chesnut brown dots, streaks, and waves, all seen apparently underneath the surface; a species of marking which, as well as the size, though not in the form, brings them near the eggs of *Charadrius cantianus*, (Kentish Plover.) In Sennaar it is often seen near a crocodile, and is hence called 'crocodile guard.'"

The male and female have in winter the top and sides of the head and cheeks, the nape, back, a band round the chest, base and tips of the wing feathers, glossy black; the scapularies, wing and tail coverts, and the feathers of the tail, clear slate grey; a band over the eyes, going round the occiput; the throat, under wing coverts, edge of pectoral black band, flanks, end of tail feathers, and distal half of primaries, except the first, (which is entirely black,) pure white; chest,



1. BLACK-HEADED PLOVER.

2. SPUR-WINGED PLOVER. 3. RUFFED BUSTARD.

crop, abdomen, thighs, and under tail coverts, clear russet. Beak black; feet and legs green.

The young, according to Degland, have the top of the head, top and sides of the neck, russet grey; back and scapularies isabelle, with reflections of greenish purple; forehead and throat dirty white; crop and top of abdomen of a vinous tint, shaded with violet; under tail coverts clear fawn-colour; small wing coverts like the back, the greater ones ash or whitish, having a black spot and tipped with white; primaries deep black; secondaries and tail feathers pure white; beak black; iris brown; legs yellow. The above description is taken from two female specimens, one killed in Egypt, and the other in France.—(Ornith. Europ. vol. ii, p. 87.)

I am indebted to the Rev. E. Cavendish Taylor for the specimen from which my figure has been taken. It was killed in Egypt, January, 1854. The egg is from Bädeker.

It has also been figured by Buffon, pl. enl. 918.

Since writing the foregoing notice, my attention has been drawn by Mr. Alfred Newton, to an interesting account of the capture of this bird in Sweden, by J. H. Gurney, Esq., in the "Zoologist" for 1853, p. 4096. This bird was an adult in summer plumage, and shot by an Englishman near Stockholm.

The following Plovers have been introduced into the European Avifauna, but upon very slight grounds. I give the synonymy and specific characters of each, so that they may be easily recognised if found straying into European territory:—

ASIATIC PLOVER.

Charadrius asiaticus, Linnæus.

Charadrius caspius,	Pallas.
" *jugularis*,	Wagler.
Guignard asiatique,	Of the French.

Specific Characters.—Grey brown above; shaft of the primaries white, with a small brown space on the middle of that of the fifth. Length eight inches.

One specimen is recorded as having been killed in the neighbourhood of Odessa, by Professor Nordmann, in April, 1836. Inhabits principally the deserts of Tartary, the borders of the Caspian Sea, and the Cape of Good Hope.

RED-BREASTED DOTTEREL.

Charadrius pyrrhothorax, Temminck.

Charadrius ruficollis,	Cuvier.
" *asiaticus*,	Horsfield; Nect. Auct.
Ægialites pyrrhothorax,	Keyserling et Blasius.
Pluvier à Collier roux, or	
Pulvier à plastron,	Of the French?
Kragen-Regenpfeifer,	Of the Germans.

Specific Characters.—Above a grey brown, with the forehead maroon, more or less dark; on the crop a broad belt of red; the last tail feather but one grey on the outside, white on the inner web, and terminated by a large brown spot. Length seven inches.

This Plover is common in India, and was introduced into the European list by Temminck, in consequence of a specimen having been shot in the neighbourhood of St. Petersburg. It was first figured by Gould, in his "Birds of Europe." I think, however, that although the species may be a good one, its claims to a position in the European fauna are so slight, that it ought to be erased from the list; and I shall merely refer my readers to Gould's figure, and the specific diagnosis above, in case they should meet with it again in the confines of Europe.

CHARADRIUS LONGIPES.

Temminck.

Charadrius virginianus,	Jardine.
" *pluvialis orientalis,*	Schlegel.
Pluvialis longipes,	Bonaparte.

This is a small variety or race of the Golden Plover, found on the Asiatic sea coasts, and which was supposed by Sir W. Jardine to be identical with the American Plover, *(Pluvialis virginicus.)* It has been captured at Malta, and is included in the lists of birds observed in Heligoland, published in "Naumannia," 1859, by Professor Blasius and Herr Gatkè. The identity of this bird with *C. virginicus* is, however, denied by Professor Blasius. He mentions both species as occurring in Heligoland.

GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)

Genus VANELLUS. *(Brisson.)*

Generic Characters.—Same as those of *Charadrius*, with the exception that in *Vanellus* there is a small hinder toe.

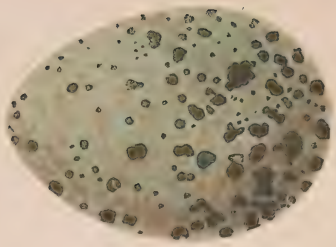
SOCIAL PLOVER.

Vanellus gregarius.

Vanellus gregarius,	VIEILLOT; Dict.
" *keptuschka,*	TEMMINCK.
Charadrius gregarius,	PALLAS.
" *wagleri,*	GRAY.
Tringa fasciata,	GMELIN.
" *keptuschka,*	LATHAM.
Chettusia gregaria,	BONAPARTE.
Pluvianus cinereus,	BLYTH.
Vanneau pluvier social,	OF THE FRENCH.
Geselliger Regenpfeiferkiebietz,	OF THE GERMANS.

Specific Characters.—Upper plumage greyish brown; superciliary ridge, occiput, sides of head, throat, under tail coverts, and most lateral tail feathers, pure white; no crest, or spurs on the wings. Length twelve inches; carpus to tip seven inches and a half; tarsus two inches; middle toe one inch and a quarter; naked part of thigh one inch; beak one inch and a quarter.

SOCIAL PLOVER.



1. SOCIAL PLOVER.

2. NUMIDIAN CRANE.

The Social or Gregarious Plover is an Asiatic species, which is found also inhabiting the southern parts of Russia, especially the swampy plains on the borders of the Volga, from whence it wanders to the Crimea, and also to the eastern parts of the empire. Its appearance in other parts of Europe is accidental. It has, however, occurred in Hungary, Dalmatia, Germany, Italy, and France. Pallas met with it in great numbers at Jaïk and Samara, on the Volga. M. Nordmann says that he has no doubt it nests in the south of Russia, and Temminck says the same thing; but they neither of them adduce any instances of nests having been found.

Dr. Leith Adams informs me that he found the Social Plover pretty common in the Punjab; and Captain Irby includes it in his list of birds observed in Oudh and Kumaon. In India it is known as the Keptusca or Cawnpore Sandpiper: I quote his own words, ("Ibis," vol. iii., p. 238.)—"Exceedingly common on open sandy plains, in January, February, and March. Never seen alone, but in flocks of from six to upwards of fifty. When on the ground they appear at first sight very like the Golden Plover, but upon taking wing they resemble *Sarciophorus bilobus* or *Lobi-vanellus cinereus*, shewing a great deal of white in the wings, but flying close to the ground, unlike the other Plovers."

There is not much known with certainty about the nidification and habits of the Social Plover. Its egg has only been in collections during the last two or three years. It is known, however, to congregate in large flocks, and to breed in companies more or less numerous. The egg, according to Bädeker, is like that of the Lapwing, but not difficult to distinguish. It is larger and more swollen in shape, and the ground

colouring is a clear greenish, often passing, towards the larger end, into reddish yellow. It is covered with brown and blackish brown spots, which are of a roundish or semicircular shape. I give a copy of Bädeker's figure of this egg.

The adult male has the top of the head, a line from the gape through the eyes, the primaries, lower part of abdomen, and a band across the end of the tail, black; a band round the vertex, throat, under wing and tail coverts, and secondary quill feathers, white, the latter having small patches of liver brown on their outer webs at the end; nape, scapularies, back, and upper wing and tail coverts, grey brown; sides of the head and neck fawn-colour; chest and crop smoky brown, terminating in the deep black of the lower abdomen, which black again terminates in feathers strongly marked with liver brown; flanks white; tail white, with a black band near the end, the most lateral feather being pure white; beak and feet black.

The female resembles the male, but the tints are less pure, and more diffused, particularly the under parts.

The young of the year, according to Degland, have the top of the head grey brown, bordered with russet; wing coverts and wings olive brown, with lighter brown borders; forehead and superciliary ray very bright brown; throat white; sides of the head, neck, and crop, like the wing coverts; abdomen pure white; the rest as in adults.

My figure is from a specimen from the Volga, sent me by Mr. Tristram.

It has also been figured by Bonaparte, Faun. Ital., pl. 41; and Gould, B. of E., pl. 292.

SIBERIAN CRANE.

GRALLATORES.

Family GRUIDÆ. (Bonaparte.)

Genus GRUS. *(Linnæus.)*

Generic Characters.—Beak as long or longer than the head, strong, straight, compressed, elongated as a cone at the point; the base of the mandible deeply channeled; nostrils in the middle of the beak, or basal, pierced from side to side in the furrow, and closed at the back by a membrane; base of the beak and space round the eyes naked, or covered with small papillæ or feathers. The thigh, above the knee, naked for some distance; three toes in front, the middle one united to the external one by a rudimentary membrane; inner toe free; posterior toe articulated higher upon the tarsus. Wings middle sized; the first primary shorter than the second, and this nearly as long as the third, which is the longest; secondaries nearest the body arched, or in some species very long, and tufted. Tail short.

SIBERIAN CRANE.

Grus leucogerana.

Grus leucogerana,	PALLAS; 1776.
" *gigantea,*	VIEILLOT; Dict., 1817.
" *leucogeranos,*	LESSON. BONAPARTE.
" "	TEMMINCK; 1843.
Ardea gigantea,	GMELIN; 1788.
" *antigone,*	LINNÆUS; 1766.

Specific Characters.—The face naked, covered with some hairs or a yellowish down; plumage white, with the first ten primaries black. Length of male three feet ten inches, female four feet six inches.

It is with much hesitation, and only as a doubtful European species, that I introduce this beautiful and magnificent bird into this work.

According to Nordmann it is common south of the Volga, and on the western shores of the Caspian Sea; he also says that two individuals were seen by Pallas in April, in the neighbourhood of St. Petersburg. Temminck endorsed this statement, but it has never been corroborated by other observers. Writing in 1855, ("Naumannia," p. 480,) Professor Blasius includes it among the doubtful European species; and in a private letter which I received from M. De Selys-Longchamps, dated August 25th., 1861, this distinguished ornithologist expresses his doubts whether it ought to be considered a European species.

The real home of the Great White Crane is Siberia and Persia, from whence, if ever seen in Europe, it accidentally wanders. The Cranes are remarkable for their long flight, and hence this and other allied species may be seen crossing parts of the European continent in their migrations, without becoming entitled to a place in its avifauna. It is a very shy bird, and its identity is often assumed from its large size and white colour, as seen at a distance.

In his interesting account of the "Vogel des Amur-Landes," Dr. Leopold Von Schrenck relies upon this species of evidence, as will be shewn in the following extract from his work:—"I believe this majestic Crane has been many times observed in Amur-Land, without

its being possible for me to kill it, owing to its extreme caution in keeping out of gunshot. I saw this bird for the first time on the 6th. (18th.) of July, 1855, on a bare sand-bank of the River Amoor, in the neighbourhood of Gorin. I recognised it by its large size, much surpassing that of the Great White Heron, and by its conspicuous white plumage. As I tried to steal towards it, it took a long step away, and then stood still again. After a short interval it flew away, with loud cries, like that of a Swan. Another time, on the 15th. (27th.) of September, I saw three of these birds on the shallow shores of an island on the lower part of the Amoor, near Ischelmok. Again the size left me no doubt about the bird at which I was looking. They flew off before the boat came within gunshot, with loud cries, and soared away high up in the air, but they again dropped down when we went away."

As this Crane, according to Pallas, is observed throughout the whole of Siberia, and is also found on the Lena, in the Dauria, in China, and Japan, Dr. Schrenck very justly remarks, so it is most probably an inhabitant of Amoor-Land.

It does not appear to get any tamer in India, where it is also found, for Captain Irby tells us, ("Ibis, vol. iii, p. 243,) that although he saw it on four different occasions at Sandea, in February, and at Hilgra, on the River Choka, in December, 1859, he could not get within shot.

I think I cannot give a better reason for my not being able to give the figure of a skin of this bird, and for availing myself of Mr. Gould's friendly permission to copy the beautiful drawing in his work on the "Birds of Europe."

The male has all its plumage a pure snow white, with the face and "tour des yeux" naked, rugose, red, and garnished with a few hairs; the ten first primaries of a deep black, not passed by the secondaries, which end in long and disunited webs, like those of the Common Crane; beak red; feet and legs lake red; iris white.

The female resembles the male, but is larger.

The young of the year have the head covered with yellow-ochre-coloured down; face, beak, and legs olive brown; the rest like the adult, but less pure in colour. —Degland.

It has been figured by Temminck and Laugier, and by Gould, B. of E., pl. 271.

NUMIDIAN CRANE.

GRALLATORES.

Family GRUIDÆ. (Bonaparte.)

Genus GRUS. *(Linnæus.)*

NUMIDIAN CRANE.

Grus virgo.

Grus virgo,	PALLAS; Zoog., 1811.
" "	KEYSERLING ET BLASIUS.
" "	TEMMINCK. SCHINZ. SCHLEGEL.
" *numidica, virgo*	
numidica vulgo dictu,	BRISSON; Ornithologie, 1760.
Ardea virgo,	LINNÆUS; Syst. Nat., 1760.
" "	GMELIN; Syst., 1788.
" "	LATHAM; Ind., 1790.
Anthropoides virgo,	VIEILLOT; Dict., 1816.
" "	BONAPARTE, 1850. DEGLAND, 1849.
Grue demoiselle,	OF THE FRENCH.
Jungfern-Kranich,	OF THE GERMANS.
Damigella di Numidia,	SAVI.

Specific Characters.—Head entirely covered with feathers, with a long tuft on each side; some of the wing coverts much lengthened. Nostrils basal. Length three feet three inches; beak two inches and a half; tail six inches and a half; tarsus seven inches; middle toe and claw three inches; outer toe two inches and one line; inner toe two inches and three lines; expanse of wing four feet and three quarters.

There is something so characteristic in the Cranes as a genus, that I cannot separate this bird from its congeners. It differs, however, from the typical species in having the head entirely covered with feathers, and in the position of the nostrils,—structural differences, which, I admit, would fully justify its separation, had not these minor differences become lost in the major affinities. In the days of Brisson a much wider margin was left in generic characters than is permitted in these present times, and although I am fully aware of the great value of precision in definition, I think we ought, at the same time, to be very careful not to make specific distinctions the ground of our increasing the number of genera; and therefore I prefer including the present aberrant form of Crane in the genus where it was placed by all authors from the time of Brisson to that of Vieillot, in 1816, who separated it as the sole representative of his new genus *Anthropoides*. He was not, however, followed by Temminck, Keyserling and Blasius, or Schlegel.

The Numidian Crane is found in the south of Russia, in Greece, Turkey, and occasionally in Dalmatia, Switzerland, the south of France, and Heligoland. It is also found in various parts of Africa. Mr. Salvin, ("Ibis," p. 355,) notices having seen small flocks in the eastern parts of the marsh of Zana. Mr. Tristram also met with it in the north, ("Ibis," vol. ii, p. 77,) and Captain Loche records its occurrence in the south of Algeria. Dr. Leith Adams informs me that it has "several times been shot in Malta during the cold weather. It is not rare in Turkey, plentiful in Persia, and eastward inhabits the continent of India, where it is well known by the name of Kulm and Kai Kara, the latter being an imitation of its cry. This handsome

Crane is much sought after by sportsmen. The flesh is excellent eating; and it is also prized on account of the fine black plumes on the neck."

Captain Irby ("Ibis," vol. iii, p. 243,) also notices its occurrence in India, where he says it is found near the Rivers Choka and Kurnalli, where flocks of several hundreds may be seen on the wing at once, and recognised by their cry when even out of sight. According to M. Nordmann, these flocks fly in the order represented in the following diagram, and they

every now and then change their places like other Cranes.

M. Nordmann has also given us a most interesting account of the habits of these birds, when they are assembled on the Steppes in large bodies after their flights. They arrange themselves in a circle or in many rows, when they will bow and dance to each other in a most grotesque manner. I will give Nordmann's description in his own words:—"They arrive in the south of Russia about the beginning of March, in flocks of between two and three hundred individuals. Arrived at the end of their journey, the flock keeps together for some time, and even when they have dispersed in couples, they re-assemble every morning and evening, preferring in calm weather to exercise themselves together, and amuse themselves by

dancing. For this purpose they choose a convenient place, generally the flat shore of a stream. There they place themselves in a line, or in many rows, and begin their games and extraordinary dances, which are not a little surprising to the spectator, and of which the account would be considered fabulous, were it not attested by men worthy of belief. They dance and jump around each other, bowing in a burlesque manner, advancing their necks, raising the feathers of the neck tufts, and half unfolding the wings. In the mean time another set are disputing in a race the prize for swiftness. Arrived at the winning-post they turn back, and walk slowly, and with gravity; all the rest of the company saluting them with reiterated cries, inclinations of the head, and other demonstrations which are reciprocated. After having done this for some time, they all rise in the air, where, slowly sailing, they describe circles, like the Swan and other Cranes. After some weeks these assemblies cease, and from that time they are constantly seen walking in loving pairs together, male and female."

In support of this statement Mr. Tristram says, ("Ibis," vol. ii, p. 76,) "A small flock of this graceful and interesting bird might generally be seen quitting one margin of a salt-pond as we approached the opposite edge. My acquaintance being so distant, I can only add my testimony to the truth of their attachment to the Terpsichorean art from the habits of four kept in the courtyard of General Yussuf, at Blidah, which I have seen performing a stately minuet or concert for an hour together."

The Numidian Crane lives upon insects, lizards, and serpents. It builds a nest of dry herbs and sticks, in which it lays two eggs, which are very like those of

the Common Crane in colour and shape. I copy the following on the subject from Bädeker's work on European eggs:—"The Numidian Crane, whose true home is in Asia and Africa, is also found in the south of Russia, the Crimea, and neighbourhood of the Black Sea and the Volga. It breeds in broken places of the high steppes, and upon the islands in great swamps. It builds its nest in the same manner as our Common Crane, and, like it, lays only two eggs, which are also very similar, both in form and colour and markings, to those of its congeners. They are, however, smaller. We possess a solitary example of a dark olive green colour, slightly marked with brown spots. It is very similar to a Bustard's egg in colour, but has the characteristic shell of the Crane. These eggs also become varied by both species interbreeding." It builds in the Crimea, where, in fact, it is stated by Pallas to be the Crane of the country.

My figure of the egg is taken from a specimen kindly sent me by Mr. Tristram. It is smaller, but in every other respect like that of *Grus cinerea*, a strong reason why we should hesitate to separate the birds generically.

The adult male has the crown of the head ash-colour; the rest of the head, upper part of the neck behind, and the throat black. The lower part and sides of the neck, the back, rump, crop, abdomen, and flanks, ash grey, the scapularies, upper and lower wing and tail coverts being of the same colour. From the posterior angle of each eye is suspended a small plume of white feathers, of about three inches and a half long, very flexible, which hang behind, and move with each movement of the bird's head. The bottom of the inferior part of the neck is covered with black feathers,

which are lengthened, and terminate in very flexible points, some of them are nine inches long, and hang over the crop. The primaries are ash-coloured on their basal, and black on their distal halves; the secondaries are of an ashy hue, those nearer the body being long and pointed, and, when the wing is shut, reach to the end of the primaries. The tail consists of twelve feathers, bluish ash, terminated with blackish. Iris brilliant red. The beak is green at its origin, yellow towards the middle, and red at its extremity. The naked part of the thighs, tarsi, feet, and claws black.

In the female the colours are less pure, and the tufts on the side of the head shorter.

My figure of this bird is after Gould.

It has also been figured by Edwards, pl. 134; Buffon, pl. enl. 241; and Gould, pl. 272.

BALEARIC CRANE.

GRALLATORES.

Family GRUIDÆ. (Bonaparte.)

Genus GRUS. *(Linnæus.)*

BALEARIC CRANE.

Grus pavonina.

Grus pavonina,	BRISSON; 1760.
Ardea "	LINNÆUS; 1766.
Anthropides pavonina,	VIEILLOT; 1816.
Balearica pavonina,	VIGORS.
Oiseau Royal and Balearique couronnée,	OF THE FRENCH.

Specific Characters.—Sides of the head covered with a naked skin in the form of ear-lobes; a membrane (not much extended) under the neck. Length from end of beak to tip of tail two feet nine inches, to end of toes three feet eight inches.

IT is with much hesitation that I have admitted this bird into the European list, and I only do so as a doubtful species. It is true we have many accounts of its having been taken at Malta and the Balearic Islands, (Majorca and Minorca,) from whence indeed the generic name of *Balearica* was given to it by Brisson, who stated that in his day (1760) it was common in those islands.

Latham, writing twenty years after, says he is at a loss to imagine how the name originated, as most assuredly the bird was not then found in the Balearic Islands. Swainson, a most accurate writer, says in his "Classification of Birds," p. 173, that specimens were brought to him in Malta, "from the little island of Lampidosa, where they are by no means scarce."

Degland admitted it into the European list, and gave Sicily as an additional locality; while Bonaparte, in his "Conspectus of European Birds," introduced it as the representative of the genus *Balearica*, being found in the islands of the Mediterranean.

In a private letter, Mr. Tristram informs me that of his own knowledge one specimen had been killed on the island of Pantellaria, between Tunis and Sicily, and belonging to the latter. On the other hand we find Keyserling and Blasius and Schlegel refuse to admit it into the European list; and M. De Selys-Longchamps, in a private letter to me, expresses a doubt of its European title. I think, however, the proof of its occasional wandering from its African home into European territory preponderates, and I therefore introduce it into my book.

It is found generally in the north-east of Africa.

The Crowned or Balearic Crane is a very beautiful bird. It is readily distinguished from the rest of the family by its short beak and the peacock-like tuft on the top of the head. It has a trumpet-like voice, and is easily domesticated. It is thus described by Lieutenant Alex. Von Homeyer, in "Cabanis Journal," for September, 1859, in a paper describing the Birds in the Zoological Society of Frankfort:—

"It is not so graceful a bird in its habits as the Numidian Crane, but it is more lively and cheerful.

The specimen in the garden is a young bird, and dances and springs, often with outstretched wings.

"In June and July it often called out in an upright position, without bending its head or opening its beak, with a full, loud, and ringing voice, 'rag, rag, rag,' at least twenty times together, which note may easily be imitated by a strong tenor voice. I seldom heard it during the autumn months;—the cry of fear when seized hold of is a loud and unpleasant shriek, 'argargargarg' repeated in rapid succession. The voice of *G. virgo* is quite different, and is very difficult to represent by words; the loud tone is sharp and joyous, and may be represented somewhere between *tirr* and *terr*.

"*B. pavonina* liked to stand on one foot in a basin filled with water, nearly three fourths of a foot deep, and would remain so during the night, which in a March temperature, did not seem natural."

It feeds on worms, insects, and small fish. I am unacquainted with its breeding habits, but I dare say they differ but little from those of the other members of the family.

The adult male has the crown of the head, from the front to the occiput, covered with soft black feathers like velvet; the sides of the head are bare of feathers, the white skin shaded above and below with red; the shape of this denuded part being like that of a kidney or ear-lobe; on each side of the throat hangs a kind of wattle, larger in some individuals than others, and of a red colour; on the occiput is a tuft, composed of hair or rather bristles arising close at the base, and spreading out on all sides in a globular form, of about four inches in length. The neck, back, rump, scapularies, crop, abdomen, flanks, upper part of the thighs, and the upper and lower tail coverts, are of a bluish ash;

the feathers which on the lower part of the neck are long, terminate in a point, and rest on the crop; some of these feathers are seven inches long. All the under and the lesser upper wing coverts are white; the greater coverts nearest the body are russet, the farthest removed blackish; primaries black; secondaries maroon, those nearest the body very long, and when the wing is closed extend nearly as far as the longest primary. The tail is composed of twelve blackish feathers. The iris grey white; beak grey brown. The naked part of the thighs and feet are blackish ash-colour; claws blackish.

The female is black where the male is blue ash, the wattles on the throat are wanting, and the long pectoral feathers less conspicuous.

The following are Brisson's measurements:—Length from tip of beak to end of tail two feet nine inches; from beak to end of claws three feet eight inches; beak from point to the oral angle two inches and a half. Tail five inches; bare part of thigh four inches and a half; tarsus eight inches ten lines; middle toe three inches and a half; outer two inches seven lines; interior two inches four lines; hinder toe one inch. Expanse of wings five feet six inches, and when closed they extend just to three fourths of the length of the tail.

My figure is from a specimen in the Zoological Gardens, London.

It has also been figured by Brisson, vol. v, pl. 41, a female; Buffon, pl. enl. 265.

The egg is from Thienemann.

Grus antigone, Keyserling and Blasius, (*Ardea antigone*, Lin., *Grus orientalis indica*, Brisson, *Ardea torquata*, Latham, *Grus torquata et antigone*, Vieillot,)

is reported by M. Nordmann to have been seen occasionally in Russia. I do not, however, think it ought to be included in the European list. It is a larger bird than *G. leucogerana*, standing upwards of five feet. It has the head and upper half of the neck naked, and in plumage is bluish grey, with the first primaries black.

In India, *G. antigone* is found in great numbers in the cold seasons. Unlike the Common Crane, it appears in pairs like *G. leucogerana*. An interesting description of its habits and nidification is given by Captain Irby, (Ibis, vol. iii., p. 242.)

It forms an immense nest of grass and rushes in the centre of large jheels, in which, in June, it lays two eggs, some of which are spotted with red at the larger end, while others are pure white. They are very tame, easily reared by the hand, and very amusing in their habits. "The flesh is like that of the goose, and makes capital soup; the liver is considered a rarity."

GRALLATORES.

Family PHÆNICOPTERIDÆ. (Bonaparte.)

Genus Phænicopterus. *(Linnæus.)*

Generic Characters.—Beak thick, strong, deeper than broad, toothed, conic near the point, naked at its base; superior mandible bent abruptly, and curved at the point, upon the lower mandible; lower mandible much deeper and thicker than the upper. Nostrils longitudinal, in the middle of the beak, pierced from side to side, situated in a furrow, and covered by an opercular membrane. Legs very long; the three anterior toes united nearly to the claws by a membrane hollowed out in front; the hind toe very short, and articulated on the tarsus at a point opposite to the articulation of the middle toe; claws broad, short, obtuse; wings middle-sized; tail short; neck very long.

ROSY FLAMINGO.

Phœnicopterus antiquorum.

Phœnicopterus antiquorum,		Bonaparte; 1838.
"	"	Temminck; 1840.
"	*ruber,*	Linnæus. Latham; 1790.
"	"	Gmelin. Temminck; 1820.
"	"	Cuvier: 1829.
"	"	Lesson; 1831.
"	*roseus,*	Pallas. Degland.
"	"	Keyserling et Blasius.

ROSY FLAMINGO.

Flammant rose,	Of the French.
Europaischer Flamingo,	Of the Germans.
Fenicottero,	Savi.

Specific Characters.—General plumage rosy; wing coverts bright rosy red; primaries black. Length four feet; carpus to tip fifteen inches; length of neck twenty-four inches; length of beak four inches; bare part of femur nine inches; tarsus twelve inches; middle toe three inches and a half.

The Flamingo is a well-known bird in the south of Europe. The European species was formerly confounded with the true *P. ruber,* which is a bird found both in America and Africa.

The Rosy Flamingo, as I venture to call it, is found principally on the coasts of Spain, Italy, and France, which abut on the Mediterranean. It is found accidently in Sicily and Calabria. It is also found on the banks of the Rhone, and in Provence; rarely on the Rhine. According to Temminck it passes the winter in great numbers in the marshes and swamps between Cagliari and Capoterra. Some years it is common in Sardinia, and others not seen there at all. It leaves Europe in March, and may then be found along the African coast as far as the Cape of Good Hope.

Lord Lilford (Ibis, vol. ii, p. 348,) mentions its occurrence in the Ionian Islands, in Tunis, Sardinia, and the south of Spain, and states that he has been assured it occurs in great numbers in the island of Cyprus. Dr. Antonio Machado, in his "Catalogo de las Aves Observada en Algunas, Provincias de Andalucia," says it is frequent on the banks of the Guadalquivir, and very common in the neighbourhood of Donana;—it migrates in spring. Count Mühle says it is not improbable that this bird does come into Greece occasionally, as it is common on the Adriatic coasts. Lindermayer

does not support this supposition, although he alludes to the capture of one straggler, about which, however, the evidence does not appear very clear. From Malta Mr. C. Augustus Wright writes,—"*P. roseus.* —Very common on the inland lakes and lagoons all along the coast of Barbary; is only a chance visitor to this island, doubtless from the want of extensive sheets of shallow brackish water, in which it delights. It is not, however, unfrequently met with crossing the Mediterranean, although it is not annually seen in Malta. Perhaps it has oftener been observed here in June than at any other time of the year. The last one I know of was taken in May, 1860."

On the Asiatic coasts the Rosy Flamingo is very abundant, more particulary in the vast and impenetrable marshes on the eastern shores of the Caspian Sea, in Persia and Arabia. Dr. Leith Adams writes to me, "It is not uncommon on the great rivers or the inland lakes of Hindostan. There is a small and large variety evidently distinct races, inasmuch as they are found in separate flocks; the difference in the length of the legs of the two is never under four inches. The smaller is the least common."

In Africa, Mr. Tristram informs us that it has an aversion to marshes or lakes which are partially surrounded by trees. He observed a large flock feeding on the open chott of Waregla. Captain Loche includes it in his Catalogue of Algerian Birds; and Mr. O. Salvin, in his interesting paper in the "Ibis," vol. i, p. 361, entitled "Five Months' Bird-nesting in the Eastern Atlas," has the following note about the Rosy Flamingo: —"It seems to be an almost universal rule throughout the world, that where there are salt lakes there Flamingos are found. It certainly is the case in Tunis

and the Province of Constantine, in Eastern Algeria; no permanent salt lake of any extent is without them. Every one who has visited Tunis must remember the vast numbers that are to be seen in the lagoon of El Bahiera, and the lake on the north-western side of the town, and will recall to mind the magnificent sight of a thousand or more of these beautiful birds rising from the water at one time, the whole mass, from the colour on their expanded wings, looking like an animated rosy cloud. They are extremely difficult of approach; and I only succeeded in shooting one, which proved to be a splendid male. On dissecting the bird I found in the gizzard nothing but the vegetable matter which grows at the bottom of these lagoons; I am therefore led to suppose that this forms the principal part of its food, and not the worms which burrow in the mud, as Mr. Darwin suggests, (Naturalist's Voyage, new edition, p. 66.)

"We found the bird equally abundant at Djendeli throughout the month of May, but obtained no certain clue to its breeding localities or nesting habits; the Arabs could tell us nothing, and we were unable to discover anything ourselves."

It is much to be regretted that Mr. Salvin did not obtain the desired information about the breeding habits of this bird, as authors differ on the subject.

Latham says, (Synopsis, vol. iii., p. 301,)—"They breed in the Cape Verd Isles, particularly in that of Sal. The nest is of a singular construction, made of *mud* in shape of a *hillock*, with a cavity at top; in this the female lays generally two white eggs, of the size of those of a Goose, but more elongated. The hillock is of such a height as to admit of the birds sitting on it conveniently, or rather standing, as the legs are placed

one on each side at full length.—(Linnæus.) The young cannot fly till full grown, but run very fast."

On the other hand, M. Crespon, as quoted by Degland, gives a different account:—"It nests in the swamps, and according to some authors, it builds its nest in the form of a broken cone, with mud and slime and grass; but, according to M. Crespon, it does not make any mound, but lays its eggs on a slight elevation, generally on a narrow path between two ditches. The nests are always in great number, and on the same line. Its eggs, two in number, are elongated, of a very dull white without spots, and a rough chalky surface; great diameter eight centimetres, nine millemetres, small diameter five centimetres and a half. The calcareous matter of these eggs is very friable, and chalky in appearance.

"It lives in societies on borders of the sea and salt marshes, and is frequently found on the shores of the Mediterranean, from Hyéres to Perpignan, and in great number on the waters of Camargue and Aigues-Mortes.

"It is shy and defiant, and very difficult to approach. When a flock reposes or feeds, some individuals act as sentries, and at the least danger a cry which may be compared to the sound of a trumpet is uttered, and the whole flock rises in the air, observing the same order as the Grey Crane."

Savi gives the following account of the nidification of this bird, ("Ornitologia Toscana," vol. ii., p. 365:)—"They nest in societies in the open lagoons near the sea; each couple builds up a conic mound of grass and mud, which is concave at the top. They deposit their eggs in this cavity, and then sit astride the mound, and thus hatch their eggs. The eggs are white, as large as those of a Goose, and two in number."

Temminck, Nuttall, and other modern writers describe the mode of nesting in the same way as Latham and Savi.

"The Flamingo feeds," says Nuttall, "on molluscous animals, spawn, and insects, which they are in the habit of fishing up by means of their long necks, turning the bill upside down to take advantage of its peculiar and otherwise awkward form; they even assist themselves often in walking, by placing the flat part of their upper mandible upon the ground in the manner of a support.

"They sleep standing upon one leg, with the neck folded back upon the body, and the head reclined under the wing. They run swiftly, but never swim from choice. Their scent and hearing are also very acute."

My figure of the egg of the Rosy Flamingo is from a specimen kindly sent me by M. De Selys-Longchamps, the distinguished author of the "Faune Belge," and well known not only for his devoted zeal in the cause of natural science, but also for his kind and munificent liberality to its professors or students. The egg was obtained from Marseilles, a well-known locality of this bird.

The adult male has the wing primaries and secondaries black, and the upper and lower wing coverts and some feathers on the flanks a bright rosy red, lighter along the border of the wing, and extending, though paler, to the upper tail coverts. All the rest of the plumage is of a delicate rosy cream-colour, lighter on the back, flanks, and thighs. Beak red, paler at the base, with its distal third black; thighs and tarsi rosy red, and covered with transverse scales about the third of an inch broad, until near the feet, when they become narrower; iris bright yellow.

Female rather less than the male, and of a lighter

rosy colour than the male, but the wings of the same colour.

The young, after the first moult, according to Degland, are of an ashy grey, with black spots on the secondary quills; beak greyish, with the point brown; legs livid; iris bright yellow. As they grow the colours become deeper; in immature adult age, "*l' age moyen*," they are of a light rose like the female; but the red on the wings is less lively, the beak, except at the point, and the legs are of a livid russet.

My figure is taken from a young male sent me by Mr. Tristram, which has the label "Carthage, March 11th., 1857."

It has been figured by almost all writers on European ornithology.

SACRED IBIS.

GRALLATORES.

Family TANTALIDÆ. (Bonaparte.)

Genus Ibis. *(Cuvier.)*

Generic Characters.—Beak long, curved, deeply grooved through its entire length, thick at the base; point depressed, obtuse, rounded; nostrils basal, small, pierced by a membrane, which covers the groove. Face naked, and no feathers between the beak and the eyes; part of the head and neck sometimes naked; tarsi of medium size; the anterior toes united by a membrane as far as the first joint; hind toe long and resting on the ground; wings medium size; the first primary shorter than the second and third, which are the longest in the wing.

SACRED IBIS.

Ibis religiosa.

Ibis religiosa,	Cuvier; 1829.
Tantalus æthiopicus,	Latham; Ind., 1790.
Numenius ibis,	Pallas. Cuvier; 1804.
Ibis æthiopica,	Bonaparte; 1850. Savigny.
Tantalus ibis,	Schlegel; Revue, 1844?
Geronticus ibis,	Wagler.
Ibis sacré,	Of the French.
Heiliger Ibis,	Of the Germans.
Abowhannes,	Bruce; Voy. v, p. 172.

Specific Characters.—Head and neck bare, or only covered with down; the middle toe the same length as the somewhat robust tarsus; primaries tipped with dark metallic green, and the elongated plumose secondaries a dark red purple; rest of the plumage white. Length twenty-six to thirty inches, carpus to tip fourteen inches, tarsus and middle toe three inches and a half; beak five inches and a half.

Is the Sacred Ibis a European bird? Such is the question asked by Prince C. Bonaparte, in his "Revue Critique de L'Ornithologie Europeenne," published in 1850, repeated by Professor Blasius, in "Naumannia," for 1855, p. 480, and reiterated in a private letter written to me by M. De Selys-Longchamps, in 1861. I really must answer to this question that I think it is extremely doubtful whether it ought to be retained in the list of European birds. Temminck, however, speaks confidently, in 1840, of its having been killed in Greece; but neither Count Mühle, or the still more recent Grecian ornithologist Dr. Lindermayer, include it in their list of birds belonging to that country. Then again Professor Nordmann, who lives at Odessa, positively states, according to Degland, that the Sacred Ibis does occur on the northern shores of the Black Sea; and moreover that this is the bird which was seen and described by Pallas, as occurring in the south of Russia, and not the African species, *Tantalus ibis*, which Schlegel, upon the authority of the Russian naturalist, has introduced into the European list.

As, however, this still doubtful question can only be resolved by facts, I will leave it an open one, and state my reasons why I seize this opportunity of the doubt, for introducing this bird into my work.

In the first place we have no detailed description of the habits of the allied species, the Glossy Ibis, which

is included in the British lists; and secondly, there is every reason why we should know something of the Sacred Ibis, inasmuch as it has become widely famous in Europe as the title of one of the best of our modern natural history periodicals, on the cover of which its now well-known portrait greets us—ever welcome—every quarter.

The Sacred Ibis has only been known in Europe, according to the records of Temminck and Nordmann, as above quoted; but it is a well-known bird in Africa, and has become classic on Egyptian soil, having been worshipped by its ancient people, by whom it was embalmed in great numbers in the catacombs of Memphis and Thebes.

The Rev. E. C. Taylor, in his "Reminiscences of Egypt," (Ibis, vol. i., p. 51,) tells us that the Buff-backed Heron, *(Ardea bubulcus,)* "does duty on the Nile as the Ibis, being generally pointed out to travellers by dragomans, etc., as the real *Ibis religiosa*. For the Ibis I should say is now a rare bird in Egypt; at any rate none of our party saw it, and I have been assured that the only part of the country where it is now regularly seen is the neighbourhood of Lake Menzaleh, near the Damietta mouth of the Nile."

This opinion is entirely borne out by Dr. Richard Vierthaller, who, in "Naumannia," for 1852, pt. ii. p. 58, has given a long and interesting account of this bird, from which I shall quote largely in the course of this notice. He says, "*Ibis religiosa*, or *æthiopica*, Nedjeabiat, White Ibis, or Abu Kedoun, called by the Arabs 'Father of the Bills,' is now only a dweller in tropical Africa, and as far as my observation reaches chiefly in the Sennaar country. In Egypt and Nubia I have never seen it, and its range begins at the Nile between

14° and 15° of north latitude. As a bird of passage it comes often with *Ciconia abdimii* at the rising of the Nile, or beginning of the rainy season, in the middle or end of July, to the town of Chartum, and remains there especially on the shores of the White Nile to breed. It sometimes chooses a Mimosa standing in the water as a secure breeding spot. After three or four months it disappears, and goes with its family up the river. On the whole it is not rare near Chartum, but it is found in much larger numbers a few days' journey more south. I have seen it in winter on the Blue Nile within 3° of the equator."

The Sacred Ibis is not included in Captain Loche's Catalogue of Algerian birds. According to Temminck it is found at Senegal and the Cape of Good Hope; but Swainson does not include it in his "Birds of Western Africa."

Dr. Hueglin met with it in pairs in August and September, on the island of Dahalak, and on the coast of Abyssinia, (Ibis, vol. i., p. 347.) Dr. Leith Adams writes me word, "Is *Ibis religiosa* distinct from *Ibis bengalis* of Cuvier? The latter is generally distributed over Hindostan, where it is known as the White Curlew. There is a little difference in the measurement of the European and Oriental specimens; otherwise there does not appear to be any distinction."

The Sacred Ibis is included by Wagler in the genus *Geronticus*, which comprises the genera *Cercibis*, *Theristicus*, *Phimosus*, *Harpiprion* of Wagler, *Threskiornis* of Gray, and *Bostrychia* of Reichenbach, and in all nineteen species spread over the continents of Africa, Asia, and America.

The subject of the present notice is the only one which occurs, and that accidentally, in Europe.

1. SACRED IBIS. 2. ROSY FLAMINGO.

3. BALEARIC CRANE.

The following account is taken from Dr. Vierthaler's paper, above alluded to:—The Sacred Ibis lives during the winter in immense numbers in the swamps which border the River Nile, where it will remain till it becomes dry, when it changes its quarters. It does not at this time appear much on the river during the day, but passes the night there in flocks of forty or fifty on the Mimosas which grow on the banks of the river. It builds in the neighbourhood of Chartum, in the beginning of September. Forty or fifty nests may be sometimes seen on a single Mimosa. The nest is more or less skilfully made, and is about the size of that of the Rook. It is made of coarse twigs, woven together with a lesser layer of fine grass and solitary feathers.

The eggs, which are of a greenish white, are generally three, rarely four, in number, and the size that of the Wild Duck, *(Anas boschas.)* It only breeds once a year, but does not confine itself to one fixed time, as eggs may be found as late as November. The nest is very difficult to reach, and thus it is not so easy to fix the exact time of incubation. The end of September, 1850, Dr. Vierthaler received six young birds in white downy clothing. The skin of the head and upper part of the neck was almost white, and mixed with black down, here and there broken into with white spots, especially near the head; the throat was all white; the flesh-coloured beak was quite straight, three inches long, and only blackish at the tip; on the under side of the *lower* mandible a slight curve might be noticed, and the furrows were strongly marked; the plump and thick feet were lead grey. Size that of a Partridge. The first plumage like that of the old bird, but less beautiful; the beak grows quickly, as by the beginning of October it had begun to curve, and the point to

colour. The feet and legs coloured less quickly.

In March, April, and May, of the following year, the birds changed their feathers at the same time as in freedom. The new plumage differed in nothing from the first, except that the elongated scapularies assumed the beautiful black blue metallic glittering, but did not reach so far as in the old birds. The young Ibises behaved themselves, notwithstanding their tender age, very sensibly, and were no disgrace to the name. As soon as they were taken out of the nest they were fed with pieces of meat, which they immediately swallowed, and always made their hunger known by a call like 'kirrirrirrirr,' and by trembling movements of the head and neck, like the young of the Golden Oriole. They very soon took meat from the doctor's hand, and thenceforward fed themselves without further trouble. In a few weeks they became great epicures, and fed upon cooked meat, vegetables, and bread, wisely putting the latter into water before they swallowed it. They took all food very willingly out of water, seeking for it like Ducks, but without any noise of beak. They displayed the greatest skill in taking the smallest insect off the ground, and quickly shelled the grass seeds. They ate frogs and lizards, though not very willingly, and were very fond of beetles.

Their stride was always long; if eager to move they made high awkward springs to reach the object. They would sit on their knees for hours at a time; they were always quiet and grave, and readily became quite tame and confiding. They came to a call like hens, and followed the cook if he tapped a dish, or came close up to him in the kitchen, and even penetrated to every corner of the house. Some of them were the doctor's constant companions in his room, and were

very quiet. In order to reach the room they had to walk up four high steps, which caused them some trouble. If he stretched out his hand to them they came with the trembling movements of their heads, before alluded to, and examined the hand carefully for food. They were very fond of laying with outstretched wings upon any soft substance. Towards other birds, as the Heron, Bustard, and Nile Goose, they behaved in a friendly manner, keeping with them night and day in the most perfect amity. To protect them from cats they were placed at night in a chest, which, as they grew, was hardly large enough to contain them, yet they sprung up eagerly into it as soon as the lid was opened, and begun to arrange themselves for the night. They seldom bathed, and when they did they stood up to their knees in water, and made themselves wet all over. Their call is an indescribable scream, 'kek, kek, kek, kek.'

In spite of being inhabitants of a tropical climate, they seemed oppressed by the heat, and if exposed much to the sun would breathe deeply with their mouths open. At the end of October of the second year, three of them were fully grown, and had learned to fly. They first went on the lowest wall of the farm-yard and the house, from whence they would return in a quarter of an hour. They then began to make flights round the house. By the end of November the whole six had learned to fly, and they made great excursions, leaving the farm-yard every morning, making wider circles round the house, and sometimes going out of sight, but they always came back in half an hour. After many months they strayed further away from home, and at last went away altogether, though they did not readily forget their home, as one of them

appeared again in the court-yard, where he stayed all day, but rejoined his companions in the evening.

In freedom, Dr. Vierthaler observes, the Sacred Ibis is very cunning, and so shy that the hunter cannot creep up to it, and almost always follows it in vain. It does not shew the same fear for the black man, as they may be seen feeding among the cattle quite regardless of the presence of the native shepherd.

The flesh of the young as well as the old birds is savoury and tender, and when well prepared is a great dainty. "The old Egyptians," observes Dr. Vierthaler, "do not appear to have been acquainted with this fact, or they would not probably have embalmed so many!"

The plumage has been so completely described in the specific diagnosis, and in my extracts from Dr. Vierthaler's paper, that I need not give any particular description.

In the third part of the sixteenth volume of the "Linnean Transactions," page 499, there is a paper by the celebrated Joshua Brookes, F.R.S. and L.S., upon a peculiar conformation in the trachea of this bird. I quote his own words;—"As there is not any unusual occurrence in the upper part of the trachea, I proceed to describe that within the thorax. Here a lateral compression takes place, of about three inches in length and one in breadth; the part thus compressed is larger and rounder at one margin than it is at the other, where it is almost acute, but having a small indentation inferiorly. It is formed of flattened minute rings, (connected by intervening membranes,) firmly ossified at their rounded edge. From the lower extremity the bronchi separate; these decussate each other in a very extraordinary manner, as may be seen in the specimen exhibited. The membranous spaces between the rings

of the bronchi are very distinct; and I must confess myself at a loss to account for this irregular arrangement. The trachea occupies the anterior surface of the œsophagus at the entrance into the thorax. The œsophagus proceeds to its destination between the bronchi. Probably one reason for the compressed figure of the inferior part of the trachea, may be for the purpose of allowing large erpetalous animals to descend in deglutition with greater facility than could otherwise happen without impediment to respiration; for in consequence of the ossified structure of this singular portion of the *Aspera arteria*, neither the pressure of the individual by its volume, nor by its struggles *in articulo mortis*, would cause obstruction."

My figure is taken from a female specimen, (which differs only in being rather less than the male,) sent me kindly by Mr. Tristram. It was captured at Chartum, and for aught we know may have been one of Dr. Vierthaler's young birds. It bears the date of July, 1852.

The egg is from Thienemann.

It has also been figured by Savigny, Egypte, pl. 7.

GRALLATORES.

Family SCOLOPACIDÆ. (Bonaparte.)

Genus NUMENIUS. *(Linnæus.)*

Generic Characters.—Beak very long, curved, compressed slightly; upper mandible furrowed for three parts of its length, its point hard and obtuse, and overlaps the inferior mandible; nostrils lateral, linear, opening into the beak through the furrow. Face and the space from the eye to the beak covered with feathers. Legs slender, naked above the knee; three toes in front and one behind, the anterior united by a membrane as far as the first articulation, the hind articulated to the tarsus, and touches the ground. Wings medium size, the first primary the longest.

SLENDER-BILLED CURLEW.

Numenius tenuirostris.

Numenius tenuirostris,	VIEILLOT; Dict., 1817.
" *hastatus,*	CONTARINI.
" *syngenicos,*	MÜHLE.
Courlis à bec grêle,	OF THE FRENCH.
Dünnschnäbliger Brachvogel,	OF THE GERMANS.
Ciurlottello,	SAVI.

Specific Characters.—Beak slender and short; under wing coverts pure unspotted white; the spots on the abdomen shaped like a spear's head. Length fifteen inches; carpus to tip nine inches and a half; tarsus two inches and a half; middle toe and claw

SLENDER-BILLED CURLEW.

one inch and a half; beak two inches and seven tenths, (circumference at base one inch;) length of keel of sternum two inches and a half; depth at highest part one inch and one tenth; breadth of sternum superiorly one inch, inferiorly one inch and a fifth.

The Slender-billed Curlew is a permanent inhabitant of Sicily, and is found accidentally in Greece, Italy, and in the south and north of France. In Sicily M. Malherbe informs us that this bird is the commonest of the three species, and Degland suggests the probability of its breeding in that island as well as in Italy. Count Mühle states, in his "Ornithologie Griechenlands," that it is as plentiful as the Whimbrel in Greece; and he thinks that it builds there, as he has observed single birds seeking food in summer, and has shot young ones in August on the sea-shore. He says it migrates the end of September.

Dr. Lindermayer, in his "Vogel Griechenlands," says he does not know the periods of its migrations, as he has only killed it in March: nevertheless it is certain that it breeds in the northern provinces. Baldamus, in "Naumannia" for 1852, says that it is plentiful, and nests in Greece and the southern provinces of Italy. He killed some specimens some years ago, which were then considered as a chance deviation from the Whimbrel. Lord Lilford, ("Ibis," vol. ii., p. 345,) records its occurrence at Corfu. In Italy, Temminck notices its occurrence near Rome, in Venice, and Pisa. Savi confirms this statement, but that it is very rare in Tuscany; and Prince Charles Bonaparte says, in the "Fauna Italica," that it is not uncommon on the marshes which lie near the banks of the Tiber. In France it has been captured in Piedmont, according to Bonelli. Degland records its occurrence in the neighbourhood of Montpellier, Nimes, and Calais; and

M. Gerbe says he saw in the museum at Caen, and in the private collection of Dr. Lesauvage, of that town, several specimens which had been shot on the sea-shores of Calvador.

Naumann includes it among the birds of Germany; and M. Dubois, in his "Oiseaux de la Belgique," records its capture near Louvain, in 1834, which specimen is in the collection of M. Isidore Bovie; and also a second specimen near Ostend, in 1836. M. De Selys-Longchamps, in a long and valuable paper in "Naumannia" for 1856, entitled "Remarks on some of the Birds of Europe," states on the authority of H. H. Bovie and Robarts, that it once nested in the neighbourhood of St. Froud, in Belgium. The same author also alludes, in his "Faune Belge," to its having been observed in Picardy by M. Baillon.

In many parts of Africa the Slender-billed Curlew is not uncommon,—as Algeria, Egypt, and Nubia. Mr. Salvin ("Ibis," vol. i., p. 359,) met with flocks of this bird on several occasions, and he shot one on a plain near E Djau. Mr. Tristram ("Ibis," vol. ii., p. 80,) states he saw one shot by a French officer at Oumache, near Biskra. The same gentleman also thinks he saw it in Southern Palestine.

N. tenuirostris has been often confounded with the Whimbrel, and I believe its occurrence has been passed over from its general resemblance to that bird. *N. tenuirostris* is, however, altogether a smaller bird than *N. phæopus*. The beak is nearly three quarters of an inch, and the wing, to the wrist, half an inch shorter. The under wing coverts in the Whimbrel are spotted, in the Slender-bill pure white; while the spots on the abdomen are distinct in the latter—not streaked, as in the former.

Dr. Leith Adams and Mr. Charles Augustus Wright have very kindly sent me four specimens of this bird shot in Malta, which vary considerably in size and ornamentation from that which I have figured. So much is this the case, that I have expressed strong doubts whether two of the specimens could be referred to this species at all. As one of the skins was intended for Sir William Jardine, I sent them all to that distinguished naturalist, expressing the doubts I felt upon the subject. Sir William, in acknowledging the receipt of the parcel, wrote me word that he thought, from a superficial examination, that one of the specimens was, as I suggested, the skin of *N. phæopus*. A subsequent and more careful examination, and comparison with skins from different localities, induced him to alter his hastily-expressed opinion, and to decide that they were all *N. tenuirostris*. This shews how very closely these species run into one another, as the largest of the four certainly differs more from Mr. Tristram's specimen, which I have figured, than it does from the Whimbrel.

The following are the dimensions and short description of the two birds in question:—No. 1.—Length seventeen inches; carpus to tip ten inches and a half; beak, from rictus all along upper curvature, three inches and a half; circumference of beak at base one inch and four fifths; under wing and tail coverts white; upper tail coverts white, with longitudinal brown markings, shaped thus ; tail white, barred with brown; head streaked with brown, with a circlet of light grey feathers round the eyes; throat white; sides of head and neck finely streaked longitudinally with brown; abdomen white, thickly streaked with longitudinal marks and cordate spots; back dark brown, the feathers lighter on their edges; upper wing coverts

lighter, with dark brown transverse bands; primaries dark brown, the shaft of the first white. No. 2.—Length sixteen inches and four fifths; carpus to tip nine inches and four fifths; beak three inches and seven tenths. In this specimen the cordate spots on the abdomen are fewer, and there is a white streak passing along the vertex from before backwards. In other respects it resembles No. 1.

To shew the uncertainty of the white under wing coverts as a specific distinction I may state that I saw, in January of this year, (1862,) in a fishmonger's shop in Colchester, a specimen of the Common Curlew, *N. arquata*, having the under wing coverts pure white, and with cordate and lanceolate markings on the abdomen, exactly like the specimens just described of *N. tenuirostris*. It measured twenty-one inches and a half long; carpus to tip twelve inches; beak four inches and three quarters.

The third specimen sent me by Mr. Wright is about the same length as No. 1 and 2, namely, seventeen inches, but the other measurements differ remarkably. From carpus to tip is only nine inches; the beak is only three inches long, and quite slender, being one inch and a quarter in circumference at its base. It does not materially differ in plumage from the others, and there is an indistinct white line from before backwards, across the vertex, as in No. 2.

This remarkable difference in essential specific characters must, I think, inevitably lead to the opinion that the two smaller European Curlews run very closely into each other, like the Nuthatches, Shrikes, Pipits, etc. The question may be very fairly raised whether there is any real specific difference between them at all. I do not think a white rump or under wing coverts

characters sufficiently strong to counterbalance the difference in the organic structures of the beak and wings, observed in different varieties of this species, especially the former, from the long thin character of which it takes its name.

Of the habits of this interesting bird, M. Dubois ("Op. Cit,") remarks:—"They live sometimes in the neighbourhood of running water, at others in that of stagnant water, but they rarely frequent the shores of the sea. It is worthy of notice that the flocks daily leave the water to spread themselves out among meadows and uncultivated fields, where they remain until they are obliged to return to the water, without which they could not live, as they drink a great deal, and frequently bathe. They are very shy. Their flesh is esteemed in Italy as a delicacy."

Of its occurrence in Malta, Mr. Wright says, in a private letter,—"It arrives here on migration in the spring and autumn; in both seasons I have shot it on Fort Manvel Island, whose low and muddy shores form one of the most attractive resorts for waders of all kinds during their passage. It also passes with other of the *Scolopacidæ* in July. I have noticed considerable variation in the size and length of the bill, (doubtless arising from age.) All those I have shot were single birds, but they are also sometimes observed to pass in flocks."

"They nest in meadows and heaths. They make a slight excavation, which they line with pieces of grass and a little moss. They lay from three to four eggs." These eggs are, according to Degland, "of a milky white, or white, shaded with yellow, marked with brown dots and irregular spots of brown and ash-colour, larger and more numerous at the greater end. In some the spots are confluent." Great diameter five

centimetres and a half, (about two inches and a fifth;) small diameter three centimetres seven millimetres to three centimetres eight millimetres, (about one inch and a fifth.)

The adult male has the upper plumage brown; the feathers on the vertex bordered with russet, those of the neck and nape with whitish ash, and of the back ashy, with a russet tinge; the rump and upper tail coverts pure white, the latter being marked with some longitudinal brown spots; the throat and under wing and tail coverts pure white; the neck in part, and the crop, marked on a whitish ground, feebly tinged with russet, with blackish brown spots, small and more like drops on the throat, increasing in size on the crop and abdomen, where they are large, distinct, and of a lanceolate form, the ground being the same: these spots are still larger and rounder on the flanks as far as the pure white under wing coverts. Superciliary ridge, cheeks, and sides of the neck ash-coloured, with fine brown spots; wing coverts brown, bordered and deeply notched in four or more indentations with white. Primaries brown: the first with the shaft white, those which follow the fourth tipped and spotted with white on their borders. Tail white, irregularly banded with brown; beak blackish brown above, flesh-coloured below at the base; legs lead grey; iris brown.

The female, according to Degland, resembles the male, but is larger, with the beak longer, and the brown spots on the abdomen elongated, and not in drops.

My figure is from a specimen kindly sent me by Mr. Tristram, and marked "Constantine, Feb. 6th., 1857," therefore in winter plumage.

It has also been figured by Bonaparte, Faun. Ital.; Savi, Ornith. Toscan.; Naumann, Vogel. Deutschlands, pl. 218; Gould, B. of E., pl. 304; Roux, Orn. Prov., vol. ii, pl. 218.

MARSH SANDPIPER.

GRALLATORES.

Family SCOLOPACIDÆ. (Bonaparte.)

Genus TOTANUS. *(Temminck.)*

Generic Characters.—Beak as long as, or longer than the head, straight, rarely curved, soft at the base, hard and solid at the point, compressed in its whole length, ending in a sharp point; the two mandibles furrowed only at their base; the extremity of the upper mandible slightly bent upon the lower at the point. Nostrils lateral, linear, longitudinally split in the furrow. Legs long, slender, naked above the knee; three toes in front and one behind; the middle toe united to the external one by a membrane as far as the first and sometimes the second articulation. Often there is a rudimentary membrane attached to the inner toe; rarely a half web. Wings middle sized; the first primary the longest.

MARSH SANDPIPER.

Totanus stagnatilis.

Totanus stagnatilis,	BECHSTEIN; Nat. Deut., 1802.
Scolopax totanus,	LINNÆUS; S.N., 1758.
Tringa guinetta,	PALLAS.
Chevalier stagnatile, or	
Chevalier à longs pieds,	OF THE FRENCH.
Teich-Wasserläufer,	OF THE GERMANS.
Piro-Piro Gambe Lunghe,	SAVI.

Specific Characters.—Beak long and thin; tail white; the upper layer of feathers barred transversely in zigzags with brown; the

inferior layer with their narrow outer webs edged with a line of brown and dirty white; the bare portion of the tibia as long as the middle toe. Length nine inches, carpus to tip five inches and a half, beak one inch and three fifths, tarsus one inch and four fifths, middle toe one inch.

The Marsh Sandpiper inhabits the north of Europe, migrating along the rivers which flow eastward and south, more especially those that empty themselves into the Black or Caspian Seas. It comes irregularly and rarely into France and Italy, and more frequently into Greece. It has been killed, according to Degland, at Dunkirk, St. Omer, Abbeville, and Dieppe, in the department of Aube, and in some parts of the south of France. Baillon mentions it as a rare visitor in Picardy. Savi says it comes in small numbers to Pisano in April, but leaves shortly after. Count Mühle says that many are killed in Greece in October and November, but it is always considered there as among the rarer birds. Dr. Lindermayer informs us that it comes into Greece with the equinoctial spring storms in great numbers. It lives in swampy meadows till the middle of May, when it goes farther north. It has not yet been found to breed in Greece. Dr. L. does not consider it so rare a bird as Count Mühle, as he has observed large flocks of them at Phaleros, and he has killed a great number in a single morning. It only frequents the islands on its migration. He did not observe it in autumn.

Lord Lilford ("Ibis," vol. ii, p. 344,) says,—"Abundant in March, April, and the early part of May, on the race-course of Corfu. The habits of the species closely resemble those of the Green Sandpiper, *(T. ochropus,)* but it is less shy, and not so clamorous. I have had excellent opportunities of observing closely

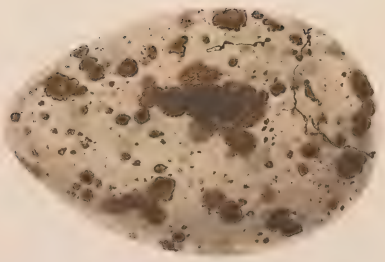
the habits of this and many other allied species on the race-course, having sometimes seen within a few yards of the spot on which I lay hidden, *T. glottis*, *T. stagnatilis*, *T. glareola*, *T. ochropus*, *Himantopus melanopterus*, *Tringa minuta*, *Numenius phæopus*, and *Glareola pratincola*."

It is included by Naumann among the birds of Germany, but it is not mentioned in the "Fauna Belge," nor by Dr. Machado in his list of Andalusian birds, though it may be expected to occur, I think, in Spain.

I have been favoured by C. Wright, Esq., with the following note of its occurrence in Malta:—"The Marsh Sandpiper, although not common, is pretty well known to the native sportsmen, who have given it a name which implies that it attracts other birds, or that when it is seen other game may be expected. What habit gave rise to its singular local appellation, or what influence it exercises over other species, I cannot say. Probably none at all. A few individuals are shot every year in spring and autumn, and sometimes they appear in small flocks. They are very easily approached, and not readily scared. An instance occurred in 1860 of one allowing itself to be taken by the hand in some short grass, in which it tried to elude its pursuer by running Rail-fashion, instead of taking to flight like other birds of its genus. It was not wounded, and did not appear to be exhausted, as, when set free in a room, it ran about briskly, its neck drawn in close to its shoulders. In April of the same year a flock of about twenty appeared at a marshy place at the head of the Great Harbour of Valetta, and it was not before seven or eight of their number were successively shot at and killed that the rest made off."

On the African shores we find it recorded by Dr. Heuglin ("Ibis," vol. i, p. 347,) as having been observed at Massana, in Abyssinia, on the shores of the Red Sea. Mr. Taylor, in the same volume, informs us that a single specimen was taken by him near Denderah, in Egypt; and Captain Loche includes it in his Algerian fauna, but only as a bird of passage. Extending eastward, Dr. Leith Adams says it is very common in Hindostan, and the countries westward; and Captain Irby, in the "Ibis," vol. iii, p. 239, on the "Birds of Oudh and Kumaon," remarks that it is "very common in the cold season. In habits resembles *Actitis glareola*, being more of a Marsh Sandpiper than *A. ochropus* or *A. hypoleucos*, both of which are found on the banks of rivers; the Common Sandpiper being seldom seen on muddy marshes."

From "Naumannia" for 1850, part 2, page 8, I copy the following about this bird, by Dr. J. F. Naumann: —"It is seen rarely in Anhalt. It has become more and more rare during the last ten years. Sometimes it has been taken by my brother on the river Wulfen. Once he shot the female, and in 1835 a pair brought out young ones in that locality. They appeared on the shallow water which remained on the morasses after the dry summer. He killed one on the 26th. of June of that year. It was only, however, just fledged, which induced him to spare the others. The brood consisted of four young ones. This is the only example known to me of the appearance of this rare bird in Anhalt. It belongs to the south of Europe, but does not appear plentiful anywhere. It is not common even in Hungary, and in my journey through that interesting ornithological country, I only saw two small flocks. It comes thence solitarily to the south of Germany, but



1. MARSH SANDPIPER.

2. WILLET.

very seldom in the central part, and still more rarely to us in Anhalt."

In the same journal for 1852, p. 82, there is an interesting account of the nidification of this bird, by Baldamus, from which I take the following:—"*T. stagnatilis* is not common in Hungary, and it is very wild. I saw a flight of about twenty the middle of June, and I killed three after many shots. This bird breeds in the middle and northern parts of Hungary. The ranger Knotz, who knew these 'water-runners' very well, assured me of this, and it is placed beyond all doubt by the observations of my young friend, Pélényi, by whom many nests with eggs were found, and who has some excellent observations about this species in his earlier monograph upon Hungarian birds. I found eggs exactly like them in the White Morass, but as I cannot speak with certainty myself, I merely remark that the eggs resemble those of *T. calidris* and *T. glareola* in form, colour, and characteristic markings, yet they are smaller than those of *T. glareola*."

According to Pallas, the eggs are greenish white, marked with spots and dots of dark brown, and Degland suggests that it probably nests in the Crimea, in addition to the other European localities mentioned in the above notice. Degland quotes the authority of the Odessa Professor, M. Nordmann, in proof that the Marsh Sandpiper "is as good a swimmer as the Phalaropes; that when it arrives at Odessa in the spring, it does not shew any fear; that when several individuals are surprised walking on the shores of a pond, unless they are chased very roughly, they throw themselves into the water, keep very close together, and escape by swimming away, rather than by flying;" and he concludes his quotation by saying, that it is

very excellent eating when fat, and that its flesh is then very tender.

The male and female in the breeding plumage have the top of the head and neck ashy white, with longitudinal grey black streaks; occiput, nape, scapularies, and wing coverts greenish brown, marked with black streaks, which are longitudinal and not large; the drops on the head and nape transverse, and larger on the scapularies and long tertiaries; primaries dark brown, the shaft of the first, like that of the Whimbrel, white; secondaries lighter brown; rump, throat, abdomen, flanks, and under tail coverts, pure white, more or less spotted on the side of the crop and flanks with greyish brown. Tail white, with the upper feathers transversely barred in zigzag with brown, the end of the two uppermost having also a ground of light brown, the lower layer of feathers edged with two lines of grey brown on their outer webs. Beak black; legs and feet dark green; iris brown.

In winter, according to Degland, the upper parts are grey, with the nape longitudinally rayed with brown; the feathers of the vertex, neck, and scapularies bordered with whitish, and those of the rump with white; inferior parts of a pure white, with the sides of the neck, the crop, and flanks, covered with small brown spots; cheeks and eyebrows white, spotted with brown; greater wing coverts ash-coloured, bordered with white; small and middle wing coverts ashy brown, with the borders less dark, and the shafts blackish; primaries black brown; tail feathers white, rayed with brown; beak blackish; legs olive green.

The young before the first moult have the upper parts blackish brown, with the feathers fringed with yellowish, and the longest transverse markings on the

wing coverts dark brown; inferior parts white, marked with small brown spots on the neck, the crop, and cheeks; primaries brown, tipped with whitish; beak brown; legs greenish ash.

My figure is from a specimen sent me by Mr. Tristram. It is a female in breeding plumage, and was killed at Memphis, March 18th., 1858. The egg is from Thienemann.

It has also been figured by Buffon, pl. enl. 876; Roux, Orn. Prov., pl. 295, (male;) Bouteille, Ornith. du Dauph., pl. 55, f. 3; Gould, B. of E., pl. 314.

GRALLATORES.

Family SCOLOPACIDÆ. (Bonaparte.)

Genus CATOPTROPHORUS. *(Bonaparte.)*

Generic Characters.—Bill straight, and solid almost its whole length, furrowed only at the base; the groove of the lower mandible obliterated. The fore toes all connected at the base by a membrane. The female conspicuously larger. These birds not only wade, but occasionally swim.

WILLET.

Catoptrophorus semipalmatus.

Scolopax semipalmata,	GMELIN. LATHAM.
" "	WILSON.
Totanus semipalmatus,	TEMMINCK. NUTTALL.
Catoptrophorus semipalmatus,	BONAPARTE.
Glottis semipalmata,	NILSSON.
Chevalier semipalmé,	OF THE FRENCH.
Schwimmfüssiger Wasserläufer,	OF THE GERMANS.
The Willet,	OF THE AMERICANS.

Specific Characters.—A white band across the wings at about three quarters of their length; under wing coverts dark brown; upper series of tail feathers light brown on their terminal half, white on their basal half; the lower series white, more or less indistinctly marked with transverse bars of yellow or light brown. Length thirteen inches and a half; carpus to tip eight inches and one fifth; tarsus two inches and a half; middle toe and claw one inch and one tenth; beak two inches and one tenth.

WILLET.

This interesting bird is a well-known American species, which has, however, occurred sufficiently often in Europe, to justify its introduction as an occasional and accidental visitor.

There is a growing feeling among naturalists to exclude all American birds from our European lists, and there is no doubt that the avi-faunæ are sufficiently distinct to justify the principle upon which this feeling is founded. But the rule which obtains with regard to the British fauna, must to a certain extent be applied to the European. If a well-known American species is found occasionally or frequently to visit the old world, we must, I think, undoubtedly place it in the same category as the other border species which visit us from Africa or Asia. Temminck in both editions of his "Manual," 1820 and 1840, asserts that the Semipalmated Plover occurs not unfrequently in the north of Europe. Degland relates an instance of its capture at Abbeville, in France. M. des Murs, in his catalogue of eggs, which is now placed in the Museum of the Academy of Natural Sciences in Philadelphia, mentions France as a locality for the egg of this bird. This, however, must be a mistake, as I believe there is no instance on record of the Semipalmated Sandpiper occurring in this country, except in its winter plumage. Professor Blasius, who is no mean authority, tells us in "Naumannia" 1855, p. 840, et seq., that, according to Count Wallengreen's verbal description, this bird is not unusual in Scandinavia. It is included also by Nilsson, in the "Swedish Ornithology," vol. ii, p. 55. I only, however, introduce this bird as an accidental visitor, and not as one which belongs to the European fauna.

In America, the Willet or Semipalmated Snipe has a range from the coast of Florida to the distant

shores and saline lakes in the vicinity of the Saskatchewan, in the fifty-sixth parallel of latitude, where Nuttall says they breed, as well as in the middle states of the Union. The account of this writer is so graphic and interesting, that I shall give a long quotation from his "Ornithology," vol. ii, p. 145.

"The Willet passes the winter within the tropics, or along the extensive shores of the Mexican Gulf. About the middle of March, however, their lively vociferations, 'pill-will-willet, pill-will-willet' begin commonly to be heard in all the marshes of the sea islands of Georgia and South Carolina. In the middle states they arrive about the 15th. of April, or sometimes later, according to the season; and from that period to the close of July, their loud and shrill cries, audible for half a mile, are heard incessantly throughout the marshes where they now reside. Towards the middle of May, the Willets begin to lay. Their nests at some distance from the strand, are made in the sedge of the salt meadows, composed of wet rushes and coarse grass, placed in a slight excavation in the tump; and during the period of incubation, with some other marsh birds, the sides of the nest are gradually raised to the height of five or six inches.

The eggs, about four, are very thick at the larger end, and tapering, at the opposite two thirds the size of a common hen's egg, (measuring over two inches in length, by one and a half in the greatest breadth.) They are of a pale, bright, greenish olive, (sometimes darker,) largely blotched and touched with irregular spots of a bright blackish brown of two shades, mixed with a few other smaller touches of a paler tint, the whole most numerous at the larger end. According to Wilson, the eggs are very palatable as food. The young, covered

with a grey-coloured down, run off as soon as freed from the shell, and are led about by the mother in quest of their proper food, while the vociferous male keeps careful watch for their safety. On entering these breeding places, the spectator is beset by the Willets flying around, and skimming over his head, with the clamorous cry of 'pill-will-willet,' accompanied at times, when much excited and alarmed by an approach to the nest, with a loud clicking note, in the manner of the Avocet. Exhausted with their vigilant and defensive exertions, at times, they utter a sad and plaintive tone, and occasionally alighting, slowly close their long, silvery, parti-coloured wings, as if acting a part to solicit compassion. Among their most common and piratical enemies are the Crows, who roam over the marshes in quest of eggs, and as soon as they appear, are attacked by the Willets in united numbers, who, with loud vociferations, pursue them off the ground.

During the term of incubation, the female, fatigued with her task, and occasionally leaving her eggs to the influence of the ardent sun, resorts to the shore, and, deeply wading, washes and dresses her plumage, frequently emerging, and performing her ablutions with an air of peculiar satisfaction. Indeed the Willets generally wade more than most of their tribe, and when disabled from flying by a wound, they take to the water without hesitation, and swim with apparent ease. The peculiar note which characterizes and gives the name to this Chevalier is only uttered by adults; and the call of the young when associated by themselves, appears to be a kind of shrill and plaintive whistle, almost like that of the Curlew.

The Willet subsists chiefly on small shell-fish, acquatic insects, their larvæ, and mollusca, in quest of which

it constantly resorts to the muddy shores and estuaries at low water.

In the fall, when the flocks of young birds associate together, which may easily be known by the greyness of their plumage, they are selected by the gunners in preference to the older and darker birds, being tender, fat, and fine-flavoured game. In the months of October and November they gradually pass on to their winter quarters in the warmer parts of the continent. Transient flocks of young, bred in higher latitudes, visit the shores of Cohasset by the middle of August, but, timorous, wild, and wandering, they soon hasten to rejoin the host they had accidentally forsaken."

Mr. Nuttall's description of the various plumages of the bird at different ages and seasons, is so good that I will make no apology for continuing my quotation from his notice:—"In the summer plumage the general colour above is brownish grey, striped faintly on the neck, more conspicuously on the head and back, with blackish brown; the scapulars, tertiaries, and their coverts, irregularly barred with the same. Tail coverts white; tail even whitish, thickly mottled with pale ashy brown, that colour forming the ground of the central feathers, which are barred with dusky brown at their extremities; spurious wing primary coverts; a great portion of the anterior extremities of the primaries, the axillary feathers, and under wing coverts black, with a shade of brown; the remaining lower and longer portion of the primaries, and the upper row of under wing coverts, white; the posterior primaries tipped with the same; secondaries and the outer webs of their greater coverts white, marbled with dusky. Wings rather longer than the tail. The lores with a spotted liver brown streak, bounded above by a spotted

white one. Eyelids, chin, belly, and vent white; the rest of the under plumage brownish white, streaked on the throat, and transversely barred or waved on the breast, shoulders, flanks, and under tail coverts with clove brown, the bars pointed in the middle.

Female coloured like the male, but an inch longer. Legs and feet dark lead-colour, the soles inclining to olive; the toes broadly margined with a sort of continuation of the web. Iris hazel.

Winter dress with fainter spots on the upper plumage, and without the dark waving transverse bars below; only the fore part of the neck and breast of a cinereous tint, marked with small brown streaks.

In the young of the year the cinereous prevails above, with a tint of hair-brown on the summit of the head, back, and scapulars; the spots ill defined, and wanting about the head, neck, and breast; the two latter cinereous, very pale on the sides of the neck; rump ash; tail coverts white. Scapulars and tertials edged with brownish white indented spots, with indications of dusky brown bars. Below, except the lower part of the neck, wholly white."

My figures of this bird and its egg are from specimens kindly sent me by Mr. Tristram. They are from Dr. Brewer, the celebrated American oologist. The former is a male in summer plumage.

It has also been figured by Nuttall, Wilson, Audubon, Gould, and the authors of the "Fauna Boreali Americana."

GRALLATORES.

Family SCOLOPACIDÆ. (Bonaparte.)

Genus Limosa. *(Brisson.)*

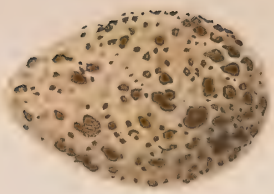
Generic Characters.—Beak very long, more or less recurved, soft and flexible in its entire length, depressed, flattened near the point; both mandibles furrowed their whole length. Nostrils lateral, placed in the lateral groove, narrow and longitudinal. Legs long and slender, and bare for a considerable space above the knee; three toes in front and one behind; the middle toe united to the external, and sometimes to the internal toe, by a membrane as far as the first articulation; the posterior articulated to the tarsus. Wings medium size, the first primary the longest.

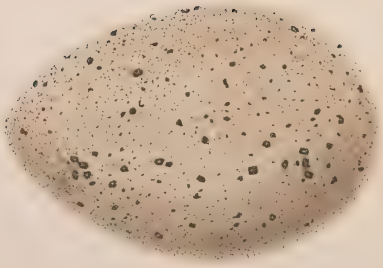
TEREK GODWIT.

Limosa terek.

Limosa terek,	Temminck, 1840.
" *recurvirostra,*	Pallas. Schlegel, 1844.
Scolopax cinerea,	Guldenstadt, (after Gmelin,) 1788.
" "	Keyserling et Blasius, 1840.
" *terek,*	Latham, 1790.
Limicula terek,	Vieillot.
" *indiana,*	Lesson, 1831.
Terekia javanica,	Bonaparte, 1838.
Xenus cinereus,	Kaup. Bonaparte, 1850.
Barge Terek,	Of the French.
Säbelschnäblige Pfuhlschnepfe,	Of the Germans.

TEREK GODWIT.





1. TEREK GODWIT.

Specific Characters.—Beak much turned up; tarsi short; middle toe slightly shorter than the tarsus; a white band across the wing, of which the under parts are pure white. Length eight inches.—Degland.

The Terek Godwit is only an accidental visitor into Europe. It is found thus wandering out of its real Asiatic home, on the borders of the Caspian Sea, and into Southern Russia. According to Temminck it has been killed in Normandy, and he says there is no difference between these specimens and those which he received from Japan. The same author has recorded its capture near Paris. He says it strays into Europe in bands of the Common Redshank. It is really an Asiatic bird, and is found plentifully in Sumatra, Borneo, and Japan.

It lives upon worms, insects, and small shell-fish.

As it is only half the size of the Godwits which are known as winter visitants to the British Isles so its egg is proportionally small, as will be seen by reference to my figure, which is copied from Bädeker's work on European Eggs, (pl. 14, fig. 4.) This egg is very like in markings that of the Wood Sandpiper, but is distinguished from it by its more obtuse lesser extremity.

Altogether we are sadly in want of authentic information about the natural history of this bird. I give Temminck's description:—

Male and female in winter.—Forehead, cheeks, throat, crop, and all the under parts of a pure white, varied in front of the neck by small ash-coloured streaks; top of the head, all the other upper parts, and the two middle quills of the tail ash-colour, very clear, the shafts of the feathers only being darker. Shoulder edges of the wings and the primaries black; the secondaries tipped with white; shaft of the first primary

white; the lateral feathers of the tail very clear ash grey, and fringed with a slight border of white. Base of the beak and legs of a livid yellow.

Male and female in breeding costume.—Forehead, ear coverts, cheeks, front and sides of the neck, marked by small meshes or striæ of dark brown on a white ground; crop and other inferior parts pure white; all the ashy feathers of the superior parts marked the length of the shaft with large brown meshes, and one black stria on the shaft; scapularies have several large black spots, and the other feathers some black striæ on the shafts; carpus and border of the wing perfectly black.

My figure of this bird is from Gould's "Birds of Europe," pl. 307.

PURPLE WATERHEN.

GRALLATORES.

Family RALLIDÆ. (Bonaparte.)

Genus PORPHYRIO. *(Brisson.)*

Generic Characters.—Beak strong, hard, thick, conic, nearly as deep as long, shorter than the head; upper mandible depressed and dilated, so as to occupy at its origin the entire forehead and part of the vertex. Nostrils lateral, round, situated at the end of the basal third of the upper mandible, and pierced from side to side through the substance of the beak. Legs long and strong; toes very long in some species, the anterior entirely divided, and all of them fringed by a slight narrow membrane. Wings medium size; the first primary shorter than the second, third, and fourth, which are each longer than the other.

PURPLE WATERHEN.

Porphyrio hyacinthinus.

Porphyrio hyacinthinus,	TEMMINCK, 1820.
" *veterum,*	GMELIN.
" *antiquorum,*	BONAPARTE.
Fulica porphyrio,	PALLAS, 1811-31.
Talève Porphyrion,	OF THE FRENCH.
Europaisches Purpurhuhn,	OF THE GERMANS.
Pollo Sultano,	SAVI.

Specific Characters.—The middle toe longer than the tarsus. Primaries purple on their external web; under tail coverts white. Length seventeen inches; carpus to tip ten inches and a half;

tarsus four inches; middle toe four inches and a half; claw of middle toe one inch; hind toe one inch and three quarters, and its much-curved claw one inch and one fifth; naked space above the knee two inches; beak from gape one inch and four fifths; upper mandible from the dilated osseous plate on the occiput two inches and a half.

The Purple Waterhen, the Porphyrion of the ancients, was celebrated by the Greeks and Romans, and deemed by them worthy of a place among their heathen gods. The genus established by Brisson, and of which the subject of the present notice is the only European representative, is remarkable for beauty of colour, for the extraordinary length of its toes, and for the expansion on the forehead of the base of the upper mandible in the form of a shield.

The Purple Waterhen or Gallinule is found on the borders of large rivers, lakes, and marshes in the south of Europe, and is very abundant in rice plantations where that cereal is grown. It occurs abundantly on the shores of large lakes and inundated grounds in Sicily and the Ionian Islands. It is also found in small numbers in Hungary, and more rarely in Sardinia. It has been observed in France, in Provence and the Dauphiné. It is included by Savi among the birds of Italy, and by Dr. Lindermayer among those of Greece. It is not mentioned in the "Faune Belge," nor in the "Birds of Belgium," by Dubois, nor in the "Vogel Deutschlands" of Naumann.

Count Mühle says he never saw this bird in Greece, although Bonaparte, Temminck, and others, quote that country as one of its habitats. Upon this Dr. Lindermayer ("Vogel Griechenlands," p. 131,) says,—"This bird has not been killed either by Count Mühle or myself, yet I have seen many of them in the bird-

markets of this country. Erhardt says in his remarks upon it, that its appearance in Greece is very limited, and that it is only known with certainty that it comes to the lake of Dystos, on the Island of Euböa, and the lake of Kopai. I have at all times had similar accounts from sportsmen, but I have never yet seen one wild." With these remarks he leaves the question still open for further enquiry.

In the north of Africa, it is reported in the Eastern Atlas by Mr. Salvin, in the "Ibis," vol. i, p. 361, who speaks of it thus:—"This magnificent species is common at Zana, where it keeps very much out of sight, under cover of the taller reeds. It is, I believe, in the habit of destroying the Ducks' nests wherever it can get an opportunity."

Mr. Tristram ("Ibis," vol. ii, p. 80,) says, "Scarce at Tuggurt, more abundant in the northern lakes (of Africa.) In corroboration of its carnivorous character, I may mention that I saw one in the yard of General Yussuf, seize a young duckling in its huge foot, and crush its head with its bill, after which it ate the brains, and left the rest of the carcase untouched."

It is mentioned by Schlegel as occurring on the borders of the Caspian Sea. Brisson and the older writers say that it occurs commonly in India.

According to the general report of naturalists this bird feeds upon corn and the seeds of aquatic plants, and upon fruits, molluscs, and fish. That it is not limited in its range of food may be inferred from the carnivorous exploits recorded by Mr. Salvin and Mr. Tristram, and quoted above.

It nests either among the herbage of marshy ground, even when surrounded by water, or in the dry ground near. Mr. Tristram, ("Ibis," vol. ii, p. 159,) in one of

the most interesting papers I ever read, detailing his visit to Lake Halloula, near Algiers, thus speaks of this bird:—"We were rewarded by a single nest of the Great Purple Gallinule. A magnificent fellow he is as he rises sluggishly from a dense mass of water-weed, shewing his rich purple sheen in the sunlight, and hanging behind him his huge pink legs and feet. His nest is very like that of the Coot, but the number of eggs seems fewer, four being the largest number I have taken in one sitting, though the complement was very probably not complete. I need not add anything to what Mr. Salvin has stated ('Ibis,' vol. i, p. 361,) as to the predatory habits of this bird. The eggs surpass in beauty, to my eye, those of any other of the class; their rich pink ground, with their red, russet, and brown spots, are very characteristic."

I am happy to say that, through the kindness of Mr. Tristram, I am able to give a figure of one of the eggs taken upon this occasion by Mr. Tristram himself.

Malherbe, in his "Birds of Sicily," gives February and March as the months in which this bird incubates; and he says that the young are hatched in April, and are covered with a bluish black down, with the beak and frontal plate blue. But the journey of Mr. Tristram, from which I have made the above extract, was made in May, 1856. Now Sicily being in the same latitude as Algiers, and only some four hundred and fifty miles further east, we can hardly imagine a difference of two or three months in the nidification of this bird in the two places. In fact there is doubt about M. Malherbe's description of the bird. Degland thus expresses this doubt in a note:—"Ce savant n' indique pas la couleur des œufs. Ne parlerait-il pas *de visu?*"

The eggs are stated by Degland to be two to four, which agrees with Mr. Tristram's account. He also describes the egg very correctly. The colour is certainly richer and deeper than that of our Waterhen, with spots and small dots of reddish brown and purple, particularly at the larger end, and with cretaceous deposits more or less apparent on the surface. Baldamus, in "Naumannia," 1853, p. 41, et seq., says:—"These eggs belong to the most beautiful of the order. They vary little in size or form, or, especially, in colour and markings."

This beautiful Waterhen, says Degland, is by nature gentle and timorous, and does not leave its solitude unless driven from it by hunger or danger. Its simplicity is such that it will allow itself to be taken alive by the boatmen, as it plunges to escape from them.

It has a heavy flight, like the Waterhen, and it only has recourse to its wings when frightened by a gun, or to pass from one marsh to another. It generally, when pursued, dives or squats down among the rushes. It is also, according to the same authority, easily tamed, and is brought up in some countries in the poultry yards among the fowls, and it is contented with the same food that they have. When anything is given it which is too large to be swallowed, it takes it up with its foot, and so carries it to its beak, where it crushes it with its hard and robust mandibles.

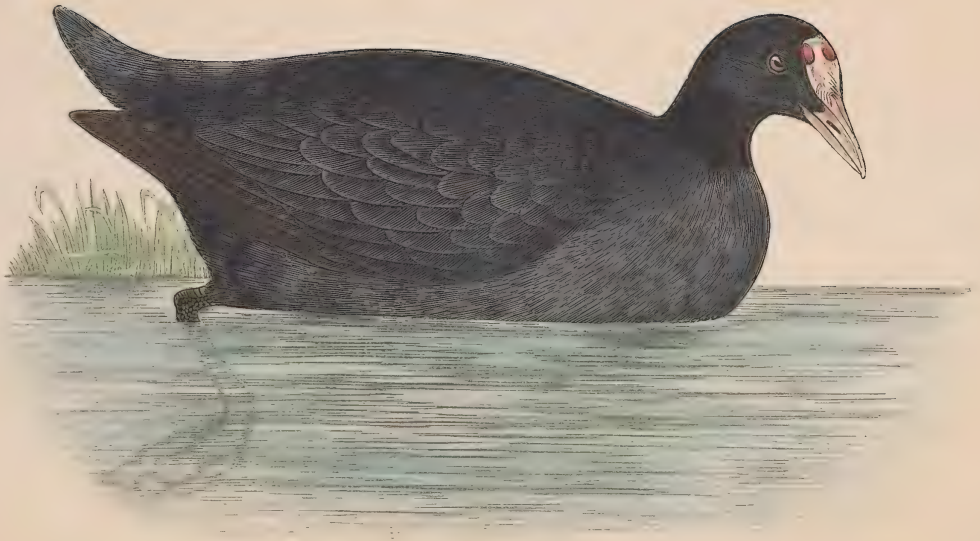
The male and female have the head, nape, scapularies, upper wing and tail coverts, outer web of primaries, and upper tail feathers indigo blue; inner web of primaries and secondaries rich hair brown; cheeks, front and sides of neck, and upper part of crop torquoise blue; rest of crop, abdomen, flanks, and

thighs bluish black; under tail coverts white; under tail feathers brown. Beak and frontal plate red; feet and legs pink; iris red.

The young of the year, after the first moult, have, according to Degland, the occiput and nape yellowish brown; upper parts brown ash, shaded here and there with indigo blue; cheeks and neck ash, washed in front with turquoise blue; crop and abdomen ash, shaded with brown on the flanks, with whitish on the under tail coverts, thighs, and lower part of abdomen; wings dark indigo blue, with the extremity of the coverts bordered with whitish; feet green russet. Before the first moult there is no blue in the plumage.

My figure is taken from a specimen kindly sent me by Mr. Tristram, marked "Algiers, Dec., 1855."

It has also been figured by Brisson, Orn., vol. v, pl. 42, fig. 1; Buffon, pl. enl. 810, under the name of Talève de Madagascar; Roux, Ornith. Prov.; Bouteille, Orn. du Dauph., pl. 58; Gould, B. of E., pl. 340.



CRESTED COOT.

GRALLATORES.

Family RALLIDÆ. (Bonaparte.)

Genus FULICA. *(Linnæus.)*

Generic Characters.—Beak middle-sized, strong, straight, conic, compressed at its base, broader than thick; upper mandible dilated into a frontal plate at its base; point of beak laterally compressed; upper mandible slightly longer than the lower; nostrils lateral, in the middle of the beak, pierced longitudinally, half closed by a membrane which conceals the widest part. Legs long, moderately robust, naked above the knee; three toes in front and one behind; all the toes long, and bordered on each side by crescentic membranous festoons; claws long and very sharp-pointed. Wings medium size; the first primary shorter than the second and third, which are the longest in the wing.

CRESTED COOT.

Fulica cristata.

Fulica cristata,	GMELIN.
Foulque à crête,	OF THE FRENCH.
Kamm-Blesshuhn,	OF THE GERMANS.

Specific Characters.—The frontal plate shaped into two red lobes or knobs, forming a crest above, below white, and divided into two strips at the base of the beak. Length fifteen to sixteen inches; carpus to tip eight inches; tarsus two inches and a half; middle toe three inches and a half; claw of middle toe four fifths of an inch; hind toe one inch; beak one inch and a half; depth of beak at base half an inch.

In the birds of which I am now treating there is a close generic resemblance, which has produced different results in the systematic arrangements of scientific writers. Linnæus classed the Porphyrion and the Coot together. Brisson, in founding the genus of the former, restricted it to those members of the family of Rails whose legs were destitute of membrane, which included the Gallinules of Gesner and others. Temminck, by reason of their lobed feet, placed the Coots in a new order, *Pinnatipedes*, thus separating them altogether from the Rails and other grallatorial birds. I think the great master whom I have followed in this work was scarcely justified in thus sacrificing both structural affinity and similarity of habit to an overstrained regard for the peculiar and solitary analogy of membranous lobes on the feet. I have therefore, as will be seen by reference to the heading of this notice, ventured to differ with Temminck in his arrangement of this bird. This frontal shield alone ought to have prevented the separation which he made in this genus.

The Crested Coot is an African species, differing but little in reality from our well-known British species, of which it is probably only a climatic race. In Europe it occurs annually in Spain, and it has been found accidentally in France and Italy. In the "Revue de Zoologie" for 1841, p. 307, M. Barthélemy states that this bird comes regularly every year to the Lake of Albufera, in the Commune of Valence, in the Department of the Drôme, in France; and that one was killed in 1841, on the waters of Marignan, a short distance from Marseilles, and which forms part of the collection of the younger M. Montvalon.

Mr. Tristram, in his interesting visit to Lake Halloula, from which I quoted in my notice of the last species,

fell in with this bird, and speaks of it thus:—"But the principal features of the open water were the myriads of Crested Coots, Wigeons, and Pochards. The Wigeons never remain to breed, but flocks of them still lingered, while a month later not one of them was to be seen. The Crested Coot appears in no way to differ, as to its habits, from its well-known congener, though its red naked forehead, with the two conspicuous lobes, suffice to distinguish it at a glance. It is somewhat the larger of the two species, and the eggs run invariably from a quarter to half an inch longer than those of the Common Coot. Pushing among the reeds, we soon found two or three of their nests, some placed among the stumps of old reed clumps, others in little openings on artificial mounds. I never found the Common Coot here; and though it certainly occurs on the lake in winter, in company with its congener, I believe that each species confines itself to its own nesting-place. Thus, in the lakes I visited in Eastern Algeria the following summer, while *Fulica atra* abounded, *Fulica cristata* never once came under our observation."

The Crested Coot is entirely black, and is distinguished from the Common Coot by the bony protuberances or caruncles at the top of the frontal plate, which are red and prominent, on a white base, by the absence of any white bar in the wings, and by its greater size. The beak is whitish at the point, and reddish at the base; legs and iris black.

In the female the crest is less developed, as will be seen in my figure, which is from a specimen of that sex obtained by Mr. Tristram at Lake Halloula.

Figured also by Buffon, pl. enl. 797; and Bonaparte, in his Introduction to the Fauna Italica.

My figure of the egg is also that of one obtained by Mr. Tristram at Lake Halloula, and kindly, with many others, placed at my disposal for illustration in this work.

The genus *Podiceps* would, in the natural order, follow here. There are, however, none which I can introduce into this work. The only species which may be considered to have a claim are the following, introduced without reason, I think, into the European lists.

Podiceps cornutus arcticus, Schlegel.—The Arctic Grebe is not, as far as I can perceive, in any way distinct from the Sclavonian Grebe, (*P. cornutus*, Latham.) A specimen sent me by Mr. Tristram differs in no respect whatever from that bird. In a long article by Kjärbolling, in "Naumannia," 1854, p. 307, et seq., entitled "Notes on the Ornithology of 1853-4," the question of the specific identity of the two birds is very ably treated. Dr. K. arrives at the conclusion that the so-called *P. cornutus arcticus* is only the female of *P. cornutus*, Latham. Therefore, he says, *P. arcticus* must be struck out of the European lists.

Podiceps lŏngirostris.—A so-called species, said by Prince Bonaparte to inhabit the Island of Sardinia, having the size of *P. cristatus* and the plumage of *P. rubricollis*, with a beak longer than the tarsus. I must confess my entire disbelief in either of these birds as distinct species. The *Podiceps nigricollis* of Sanders is the *P. cornutus* of Latham.

ALLIED TERN.

Order XV.—PALMIPEDES. *(Temminck.)*

Family LARIDÆ. (Bonaparte.)

Genus Sterna. *(Linnæus.)*

Generic Characters.—Bill as long or longer than the head, nearly straight, compressed, tapering, edges sharp, pointed, mandibles of equal length, the upper one slightly curved towards the point; nostrils near the middle of the beak, slit longitudinally, and pierced from side to side. Legs small, naked above the knee for a short distance; tarsi very short; four toes, the three anterior united by membranes, deeply concave in front; hind toe free; middle claw longer and sharper than the others. Wings very long, pointed, the first quill feather the longest.

ALLIED TERN.

Sterna affinis.

Sterna affinis,	Temminck. Rüppell.
" *media,*	Horsfield; Lin. Trans., vol. xiii, p. 199.
" *arabica,*	Ehrenberg.
Thalasseus affinis,	Bonaparte.
Hirondelle de mer voyageuse,	Of the French.
Rüppell's Seeschwalbe,	Of the Germans.

Specific Characters.—Middle toe with claw longer than the tarsus; beak long, yellow; feet black; wings pass the end of the forked tail by an inch and a half or more. Length fifteen inches;

carpus to tip eleven inches; beak two inches and nine tenths; height at base seven lines; tarsus eleven lines; middle toe and claw one inch and one fifth.

We have now arrived at Temminck's last order—the web-footed birds. In the fourteenth order, the *Pinnatipedes*, which includes the lobe-footed birds, as the Phalaropes and the Grebes, I have had no bird to represent, inasmuch as I declined to take the Coots out of the *Grallatores*. In fact we may, I think, without any confusion drop this order altogether, and include it among the *Grallatores*. They form, however, a link between the true waders and the swimmers. Yarrell placed the Grebes among the *Natatores*, an order not comprised in Temminck's system; Bonaparte placed them with the Divers at the end of the list, after the Puffins; while Schlegel makes the Grebes and Divers the two first groups of his water-birds.

It would perhaps have been better to have placed the *Colymbidæ* the first genus in the class *Palmipedes*, inasmuch as they are entirely web-footed, and they would not then have been separated so far from the *Podicipidæ*, with which they have strong affinities. I will not, however, create confusion by deviating any further from a system which, taking it altogether, is the simplest and most natural ever presented to the ornithological student.

The Allied Tern, so called by reason of its affinities with the Sandwich Tern, was introduced into the European list by Temminck, and has been admitted as an European species by Bonaparte, Schlegel, and Degland.

Temminck informs us that it occurs in the Grecian Archipelago, on the Bosphorus, and the borders of the Danube. Degland adds to these localities the

borders of the Caspian Sea. Blasius does not include it in "Der Wirbelthiere," but states, in "Naumannia," 1855, that there are grounds for its admission. It is not, however, mentioned by Count Mühle or Dr. Lindermayer as being found in Greece, neither is it included in Lord Lilford's list of birds occurring in the Ionian Islands, nor by Mr. Simpson among those of Western Greece. Probably there has been some confusion between this bird and the Gull-billed Tern, *(Sterna anglica.)* It is better known, however, in Africa and Asia than in Europe.

Mr. Tristram includes it among his Syrian birds, ("Ibis," vol. i, p. 88;) and in the same volume, p. 350, Dr. Hueglin records its occurrence on the shores of the Red Sea, and most commonly on the southern coast. Temminck received specimens from New Guinea, Ceram, and Celebes; and in the thirteenth volume of the "Linnæan Transactions," p. 190, No. 3, Dr. Horsfield describes it as *S. media* among the birds of Java, the *S. affinis*, No. 5 of that paper, belonging to the Gull-billed Tern, *S. anglica* of Montagu.

In the "Ibis," vol. ii, p. 127, Baron R. K. Von Warthausen gives a description of the nidification of this bird, and three very good drawings, by J. Jennings, of the egg. The nests were found near Amarat, and on the Island of Lobo, (Archipelago of Duhalek,) the end of July and beginning of August, on coral reefs close to the beach, in shallow cavities of three inches in diameter, and sometimes without a cavity, on pebbles or fragments of chalk. They breed separately, both from *S. senegalensis*, a species found in the same locality, and from themselves.

"The average dimensions of eight eggs are twenty-three lines by sixteen. The weight of the shell varies

between thirty-six and forty-four grains. There are two principal varieties with respect to colour. A.—White or greenish white, with coarse spots, sometimes scattered, sometimes arranged in groups. The centre of each spot is violet grey or blackish grey, which colour passes into a beautiful chesnut brown and dark brown towards the periphery; the edges are generally burnt brown. These eggs resemble those of *Cephus grylle*, (the Black Guillemot.) B.—Yellowish, sometimes with a reddish shade, dotted and striolated; the darkest points, dots, and streaks are black brown or brownish red; the margin of the spots shining brown or red. In one specimen bluish grey spots form a zone round the base, with many flourishes. All the eggs, held against the light, are transparent yellowish green. Some of the eggs much resemble those of the Sandwich Tern, *(S. cantiaca,)* but they are all distinguished by the more variegated colouration, the smaller size, and the different structure, characterized by shallow serrated pores, and by finely-granulated rounded tubercles, which render some parts of the shell rather rough."

Male and female in breeding plumage have the forehead, vertex, and occiput of a deep black; nape silvery white; top of the body bluish ash, like the Sandwich Tern; lower part of the body, front and sides of the neck, and cheeks of a silvery white; wing coverts like the back; primaries of a velvety ash, bordered on their inner webs with white; tail bluish ash, darker than the wing coverts, with the most lateral quill on each side of a velvety ash; beak yellow; feet black.—(Degland.)

Male and female in winter.—Forehead and half of vertex anteriorly white; the other half and the occiput

black, varied with white; a crescent-shaped patch of black in front of the eyes; the yellow of the beak less lively. The interior border of the sixth, seventh, and eighth primaries white, and very regularly defined.

My figure is from a specimen sent to me by Mr. Tristram, and is in the transition state between the two plumages. Like all other birds figured from Mr. Tristram's collection, no notice being given to the contrary, this specimen was shot by Mr. T. himself.

It has also been figured by Buffon, pl. enl. 987, in summer plumage; Bouteille, Ornith. du Dauph, pl. 60, fig. 1; Rüppell, Atlas, pl. 14; Gould, B. of E., pl. 417.

The egg is (by permission of the editor) from Baron Warthausen's plate in the "Ibis," vol. ii, p. 127.

PALMIPEDES.

Family LARIDÆ. (Bonaparte.)

Genus LARUS. *(Linnæus.)*

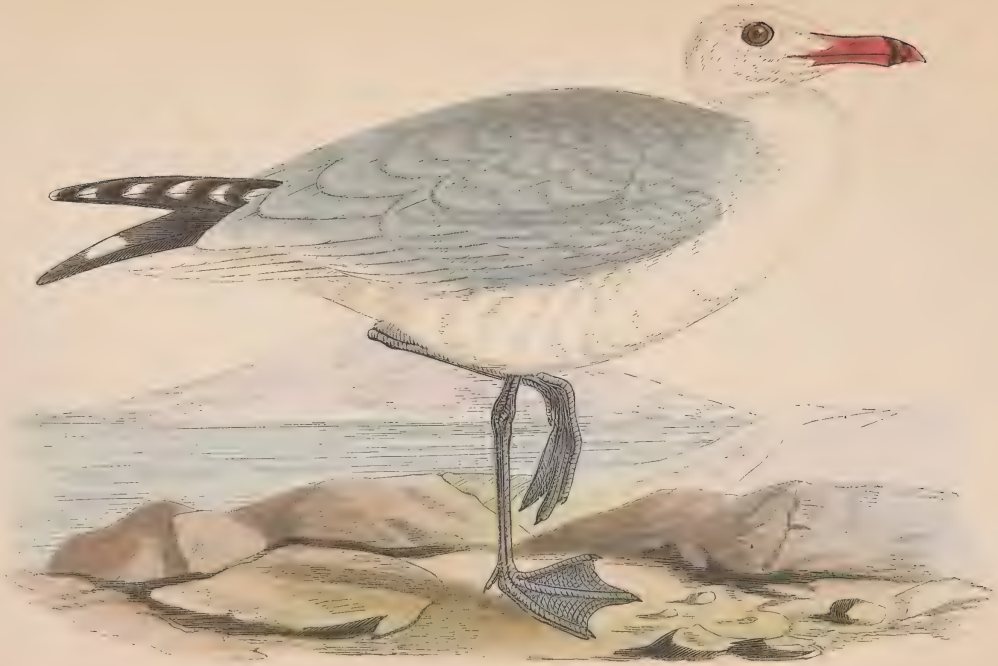
Generic Characters.—Beak long or middle-sized, strong, hard, compressed, with cutting edges, curved towards the point, the inferior mandible forming a projecting angle. Nostrils lateral, in the middle of the beak, split longitudinally, narrow, pierced from side to side. Feet slender; naked above the knee; tarsi long; three toes in front, entirely webbed; the hind toe free, short, and articulated very high on the tarsus. Tail with quills of equal length. Wings long, the first primary a little longer than the second.

AUDOUIN'S GULL.

Larus audouinii.

Larus audouinii,	PAYRODEAU; Ann. des Societ. Nat., 1826.
Goëland audouin,	OF THE FRENCH.
Buntschnäblige Move,	OF THE GERMANS.
Gabbiano Corso,	OF SAVI.

Specific Characters.—Wings very long, passing a considerable distance beyond the end of the tail; beak strong; feet black; middle toe much shorter than the tarsus; most frequently two transverse bands on the beak. Length eighteen to twenty inches; tarsus two inches.



AUDOUIN'S GULL.

1. AUDOUIN'S [illegible]

This Gull inhabits the Mediterranean Sea, where it may generally be found in Corsica, Sardinia, and more rarely in Sicily. M. Temminck, who is my authority for these localities, further adds that it is common in the Gulfs of Valinco and Figari, at Porto Vecchio, and the mouths of the Bonifacio. Dr. Lindermayer includes it among the Grecian birds, on the authority of Erhardt; and Lord Lilford says a fine specimen was killed near Corfu, in May, 1857, and, though he saw no other specimens, he believes it to be uncommon there, ("Ibis," vol. ii, p. 253.) Savi introduces it into the *Ornitologia Toscano*. On the African coast we find it mentioned by Mr. Taylor ("Ibis," vol. ii, p. 54,) as occurring near Cairo; and it is included in Captain Loche's Algerian catalogue. Mr. Tristram saw it about Caiffa Bay, on the Syrian coast.

This Gull feeds upon fish, molluscs, and crustacea. It breeds among the rocks, on the borders of the sea, and lays three or four eggs, which, according to Temminck, vary in their colour from yellowish white to a greenish grey, sprinkled with brown spots. It is sometimes found quite white, or bluish, without spots. It is, in fact, as Mr. Tristram writes me word, exactly like that of our Lesser Black-backed Gull, *(Larus fuscus.)*

The following is Temminck's description:—Head and neck of both sexes in winter white, covered with a number of ash-coloured striæ; the crop, the neck, the flanks, abdomen, rump, and tail, pure white; the primaries black, tipped with white, and with a white spot on the interior web of the first: the back, the scapularies, the wing coverts, and the secondaries are of a bluish ash; the wings pass the end of the tail three inches; the beak is of a lake red, with two

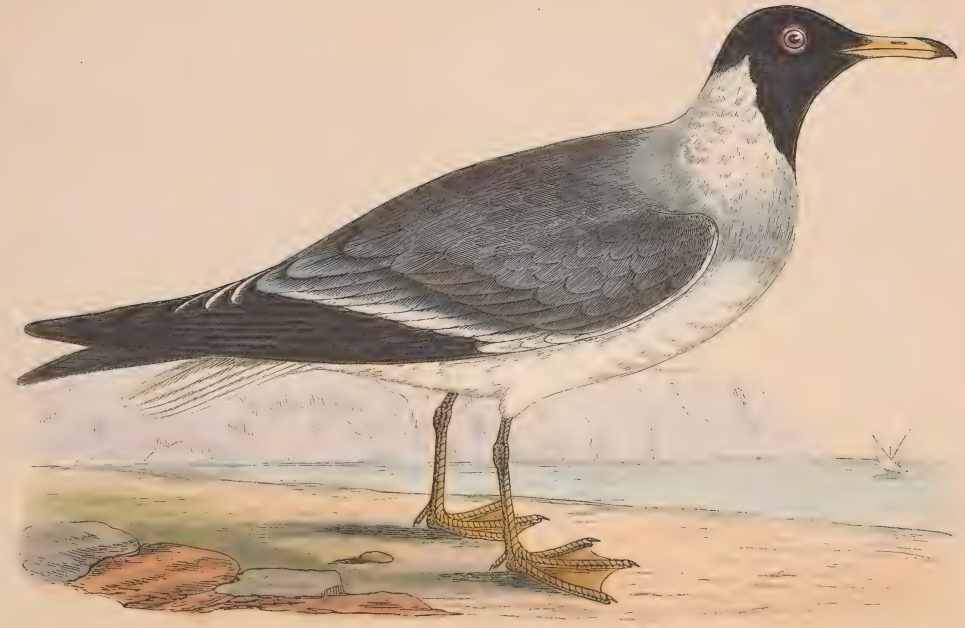
transverse black bands near the tip of both mandibles; the naked circle round the eyes golden; the legs, toes, and webs black.

In their summer dress they have the head, nape, and neck white, these parts, as well as the crop, lightly shaded with rose. Beak blood red, always carrying, in a manner more or less decided, two black transverse bands.

The young of the year have generally a plumage more or less tinged with many shades of ash and brown; the mantle brown, irregularly spotted with clear brown and russet; and the tail more or less spotted with black and brown. In their second moult in autumn they assume some grey traces on the head and neck; but after their second moult in spring the plumage is perfect.

My figure of this bird is taken, in the absence of an authentic skin, from that of Mr. Gould. The egg from Thienemann.

The bird has been figured by Temminck and Laugier, pl. col. 480, adult in spring plumage; Gould, B. of E., pl. 438.



WHITE-EYED GULL.

PALMIPEDES.

Family LARIDÆ. (Bonaparte.)

Genus LARUS. *(Linnæus.)*

WHITE-EYED GULL.

Larus leucophthalmus.

Larus leucophthalmus,	LICHTENSTEIN. TEMMINCK.
Xema leucophthalmum,	BONAPARTE.
Goeland à iris blanc,	OF THE FRENCH.
Weissäugige Move,	OF THE GERMANS.
Adjameh,	OF THE ARABS.

Specific Characters.—Tarsus two inches long; beak from the eyes to tip, two inches and four fifths; a black hood, lightly tinged with grey in the adult, and with ash brown, the feathers being bordered with white, in the young. Length sixteen inches and four fifths.—DEGLAND.

THIS species is found on the coasts of Greece, on the border of the Red Sea, and the shores of the Bosphorus. Count Mühle says it visits Greece in spring in flocks, but that it is local, being found especially in the lower end of the narrow channel which separates the Island of Euböa or Negropont from Bœotia and Attica, near the town of Egripos, where, in the clear shallow salt water it may be seen

fishing constantly, and not by any means shy, like the Black-headed Gull. After remaining from eight to fourteen days it disappears.

Temminck says that they live in great numbers among the Grecian Islands; but Lindermayer merely copies what Count Mühle has written, with the addition that he shot one in the locality mentioned by the latter. They are probably therefore merely seen in Greece during their migrations further south, where they breed. Dr. Hueglin ("Ibis," vol. i, p. 349,) says they are very scarce north of the tropic, but very frequent more to the south; and Baron Warthausen ("Ibis," vol. ii, p. 129,) says that when Dr. Hueglin examined the Island of Perim, "he found a high rocky part of it almost exclusively occupied by *Larus leucophthalmus*, which had selected that spot for breeding, (Sep. 17th., 1857.) Two eggs containing mature embryons, which cannot be referred to any other species, were found under a bush. One of the specimens procured for my collection, shews that the eggs are as closely allied to those of the preceding species (*Larus hemprichii*) as the birds themselves are to each other. It is twenty-four lines long, and twelve lines broad."

The description which the Baron gives of the egg of *L. hemprichii* is,—"The pale greyish yellow, rarely brownish yellow, sometimes greenish grey ground-colour, is speckled, dotted, and striolated with grey and pale brown. They are moderately shining, and have a weight of forty-six to forty-eight grains, or more." The egg of *L. leucophthalmus* he says, "has a darker and browner ground-colour, the same grey and brown markings; and besides it is lineolated with blackish on the broad extremity. The grain equals that of the

eggs of *Larus hemprichii*, but appears to be rather more strongly developed."

Male and female in spring have all the head, part of the nape, all the throat, and the front part of the neck, black, with a small white spot above and below the eye; a demicollar of pure white encircles the nape, advancing to a point on the side of the neck; below this is another kind of collarette of bluish ash-colour, which extends to the sides of the crop and flanks; the upper part of the body slate-colour; front of the neck, middle of the crop, abdomen, and under tail coverts pure white; wing coverts slate-colour; primaries black; secondaries bluish ash, with their external webs black, and the points white; tail pure white. "Naked space round the eye and beak coral red, with the point blackish; iris dark brown; gullet yellowish corneous; feet yellow, the joints more plumbose."—(Hueglin.)

The young before the first moult have all the upper parts, flanks, and the greater part of the tail dull brown or earth colour; primaries dark brown; only the extreme point of the secondaries white; throat, front of the neck, crop, and middle of abdomen white, legs lead brown or greenish; and the beak black. After the first moult, during the winter, the head and top of the neck dark ash brown; top of the body slate colour; under parts pure white; primaries black, terminated by a fine white border, scarcely visible in the three first; the secondaries broadly tipped with white; tail perfectly white; beak russet yellow; legs dull yellow; iris white.

Figured by Temminck and Laugier, pl. color. 366, plumage of spring. The figure is from Werner's Atlas of Plates to Temminck's Birds of Europe.

PALMIPEDES.

Family LARIDÆ. (Bonaparte.)

Genus LARUS. *(Linnæus.)*

SLENDER-BILLED GULL.

Larus tenuirostris.

Larus tenuirostris,	TEMMINCK.
" *gelastes,*	LICHTENSTEIN.
" *genei,*	DE BREME; Revue Zoologie, 1839.
Xema lambruschinii,	BONAPARTE.
Mouette à bec grêle,	OF THE FRENCH.
Dünnschnäblige Möve,	OF THE GERMANS.

Specific Characters.—Beak long and slender; wing coverts lead colour; the first three primaries with their inner webs white, bordered with dark brown, the first narrowly, the others deeper, the fourth entirely dusky. Length of tarsus one inch and three quarters; length sixteen inches; carpus to tip eleven inches and a half; beak two inches and a fifth; middle toe one inch and one tenth.

THIS Gull is, according to Temminck, likely to be found much more frequently on the Mediterranean shores than the few recorded instances of its capture on European ground would lead us to infer; being, according to the opinion of that naturalist, frequently confounded with its congeners.

SLENDER-BILLED GULL.

Two instances are related of its having been seen by M. Cantraine in Sicily, and the following is copied from the "Faune Meridionale" of M. Crespon:—"When the ornithology of the Gard appeared, I first made known that this new species was found in France. Temminck had only previously received two skins from Italy. But in the spring of 1842 I had brought to me five of the same bird, which had been captured on the borders of the sea. I saw at a glance that two of the females had already begun to sit, and I no longer doubted that it nested in France. Having informed myself where these specimens came from, I went in search of their eggs, which were previously unknown to me. I arrived, but not without some difficulty, at the top of a sand-hill, which was entirely surrounded by the sea, and I there found some eggs of which the following is a description:—As large as a hen's egg, white, but covered with a great number of spots, more or less large, which were black, blackish brown, or ash-colour, more numerous at the larger end. Some of the eggs were almost entirely white, and it was not without trouble that I found some ashy spots, as though they had been effaced. There were some individuals of this species of Gull flying about the spot."

The description of M. Crespon, says Degland, of the eggs of this bird, "agrees with that which M. Moquin-Tandon gave to me; according to whom they would be of a dirty white with dark grey and brown black spots. Great diameter five centimetres four millemetres, small diameter three centimetres eight millemetres."

Dr. E. Baldamus ("Naumannia," 1853, p. 419, et seq.) has the following remarks:—"These eggs differ at a glance from all other Gulls' eggs, in having one

entirely bright white ground colour. When fresh they may have perhaps just a touch of greenish or yellowish, and herein they resemble the bright eggs of *Sterna cantiana*, though they differ remarkably in their coarser shell and larger size. The markings of the dull eggs are umber and black brown, with indistinct spots of ash grey. Great diameter fifty to fifty-five millemetres, small diameter thirty-seven to thirty-eight millemetres."

It is not included by Count Mühle among his Grecian birds. Lindermayer says it occurs there, on the authority of Erhardt and Degland. It is not much more common on the African side, or at least its appearance is not often mentioned by naturalists on that continent. This may happen in consequence of the bird being confounded with other species. Captain Loche includes it in his list of Algerian birds; and my figure is taken from a bird obtained by Mr. Tristram at Tunis, on the 13th. of January, 1858, and therefore in its winter plumage. It is a female, and the following is its description:—

Head, nape, neck, tail, all the lower parts, lesser wing coverts, and the greater part of the four first primaries, white, with a rosy tinge; scapularies, greater wing coverts, secondaries, and greater part of primaries (after the first four) light lead-colour; outer web of first, inner border of the first four, and end of the fifth and sixth primaries black. Mr. Tristram's label says, "Irides white, with a pale sulphur ring; tarsi reddish orange; beak dark carmine; lower plumage rich rose." And in a private note to me he further adds, "Observe the rich rosy tint in *L. tenuirostris*. It is very much faded, but was a brilliant salmon-colour, and the beak and legs brilliant."

According to Degland, individuals before the age of

two years or after the second autumnal moult, have the head, neck, and lower parts of the body white; upper parts ash, with the wing coverts brown russet, bordered with tints more clear; the four first primaries white, bordered and terminated with brown black, the others bordered with ash and tipped with white; tail white, terminated by a transverse brown band, and a border of russet grey.

In some respects this description accords with the specimen from which my figure and description are taken, but in that the tail is pure white.

It has also been figured by Bonaparte, in Icon. Faun. Ital., fascic 43, fig. 1.

PALMIPEDES.

Family LARIDÆ. (Bonaparte.)

Genus LARUS. *(Linnæus.)*

MEDITERRANEAN BLACK-HEADED GULL.

Larus melanocephalus.

Larus melanocephalus,	NATTERER.
Xema melanocephalum,	BONAPARTE.
Mouette à capuchon noir,	OF THE FRENCH.
Schwarzköpfige Möve,	OF THE GERMANS.
Gabbiano Corallino,	SAVI.

Specific Characters.—Middle toe much shorter than the tarsus; beak strong and large; head entirely black in summer plumage; wings, when closed, pass beyond the tail. Plumage in winter, with the exception of black spots above the head and cheeks, black mark on outer web of first primary, with light slate-coloured mantle, entirely white. Length sixteen inches; carpus to tip twelve inches; tarsus two inches; middle toe and claw one inch and three quarters; beak two inches.

THE Mediterranean or Adriatic Black-headed Gull is found at various parts of the sea-coasts from which its English names are derived. It was first described as a distinct species by Natterer, and introduced into the

MEDITERRANEAN BLACK-HEADED GULL.

European lists by Temminck, in his "Manual," (ed. 1840.) It is closely allied to *L. ridibundus*, but is distinguished from it by its larger and stronger beak, by the length of the tarsus, and by the absence of the black wing marks in winter.

Temminck says that it inhabits the "shores of the Adriatic, and is very common on those of Dalmatia, in the marshes. I have only seen it there, nor can I say that it inhabits the Archipelago or other southern parts. I never saw it on the lakes of Hungary, but it has been observed at Trieste, among the great inlets so frequent on these shores. It is only seen in stormy weather." It is mentioned by Lord Lilford as being "very common in winter at Corfu, and on the coasts of the mainland; breeds in the marshes of Albania and Dalmatia."—("Ibis," vol. ii., p. 356.) Degland reports that it has occurred on the Rhine, and in the Gulf of Lyons, and that it accidentally visits Germany and France. It is included in the birds of the former country by Naumann. Savi also includes it in the birds of Tuscany. He says that now and then an individual is seen in the winter, and still more rarely in the spring, and that it is more frequently seen in the Mediterranean than in the Adriatic. He quotes Calvi for its appearance at Geneva, and says he did not often see it about Venice.

It will be seen by the following extract from the "Ornith. Griechenlands," that Count Mühle thinks the bird figured by Savi is *L. ridibundus,* while his description refers to the real *L. melanocephalus*:—"Though I have had brought to me many specimens of this bird in different clothing, yet they do not appear to agree with the figures and descriptions of Naumann, Temminck, and Brehm. I can only recognise my specimen in the

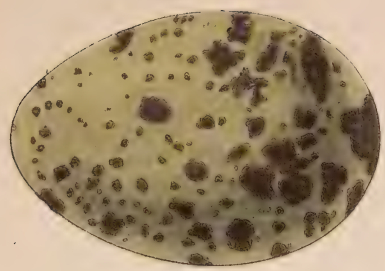
description of Savi; the figure, on the contrary, of Savi appears to be *L. ridibundus*, as the black cap in *L. melanocephalus* is deeper. The specimens before me have the size and form of *L. ridibundus*, but they are more compact, and have a stronger and higher beak; the beak, the feet, and the border round the eyes are the same. Dr. Michahellis, in the 'Isis' of 1833, No. 9, as well as Savi, state this border to be carmine red. The whole body, except the black head and the light lead-coloured mantle, pure white, the under parts tinged with rosy red; the eyelids white."

Count Mühle says the species is becoming rare in Greece. It appears to breed there, but he did not discover the nests. "It is not very shy, but becomes cautious after being often shot at. It may be sought for in spring, in swampy places, with the Terns, and, like similar species, it feeds on insects."

Dr. Lindermayer says he has only seen it in spring, when it appears tolerably plentiful over harbours and creeks. In the first week of May it disappears, and he has reason to believe that it breeds on the coasts; but he never got the eggs. "It does not appear to come into the Archipelago."

I quite agree with Dr. Lindermayer, that there is no ground whatever for acceding to the proposition of Count Mühle, to change the name of this bird to that of *Larus michahellei*.

Captain Loche records this species among the birds of Algeria, but Mr. Tristram doubts whether it breeds there. At all events he did not find any eggs. Baldamus, however, ("Naumannia," 1853, p. 419,) says that he had received eggs from the south of France and Algeria; that they are found in Hungary without any doubt, ("Naumannia," vol. ii., p. 81.) The dimen-



sions are, according to the same authority, great diameter forty-four to forty-five millemetres, small diameter thirty-five to thirty-five and a half.

The male and female in breeding plumage have the head and upper half of the neck of a profound black, with the eyelids white; top of the body light lead-colour; inferior half of neck, crop, abdomen, and under tail coverts of a pure white; wing coverts, and basal half of primaries light lead-colour, the rest, just to the point, white; tail pure white; beak, legs, and feet of deep well-marked blood red, with a black transverse band between the point and the angle of the former; the free border of the eyelids dentate, and the colour of red lead; iris dark hazel.

The winter plumage has been described in the diagnosis. Beak, legs, and iris as in the spring dress.

According to Degland, from whom the above description of summer plumage is taken, the young of the year have the head and neck waved with grey and white; top of the body brown, washed with bluish ash, with the borders of the feathers whitish; crop undulated with grey and white, like the neck; abdomen and under tail coverts pure white; wings like the upper parts; primaries black without white tips; tail white, barred with blackish near the end; beak livid at its base, black at its point; legs livid russet brown.

The figure in light plumage is a female in winter dress, from Malta, marked "Jan. 25, 1858," and kindly sent me by Mr. Tristram. The figure with a dark head is a male in breeding plumage.

It has also been figured by Stor, Degl. Uccelli, pl. 526 and 528, in winter plumage, and 527, in that of spring; Gould, B. of E., pl. 359, in breeding plumage.

The egg is from Thienemann.

PALMIPEDES.

Family LARIDÆ. (Bonaparte.)

Genus LARUS. *(Linnæus.)*

GREAT BLACK-HEADED GULL.

Larus ichthyaëtos.

Larus ichthyaëtos,	PALLAS.
Xema ichthyœtum,	BONAPARTE.
Mouette ichthyaète,	OF THE FRENCH.
Fischmöve,	OF THE GERMANS.
Rybak,	OF THE RUSSIANS.
Charabalta,	OF THE TARTARS.
Great Gull,	LATHAM.

Specific Characters.—Spring plumage. Beak large and thick; tarsi long; head and neck velvety black, with a white spot over each eye; mantle greyish blue. Length twenty-five inches; wing, from carpus to tip, eighteen inches and a half; tarsus three inches; bare part above knee one inch and three quarters; bill, from gape, three inches and five eighths; bill, from forehead, two inches and a half.

THIS interesting bird was shot the end of May or beginning of June, 1859, in the River Exmouth, by William Pine, the boatman of W. Taylor, Esq., of Bridgewater, whence the specimen passed to the late F. W. L. Ross, Esq., by whom a description will be found in the "Zoologist" for 1860, p. 6860, as well as

GREAT BLACK-HEADED GULL.

in the "Annals and Magazine of Natural History" for December of that year.

As it has not been figured as an English specimen, it will fall into the list of birds introduced into this work. Its appearance on our shores is quite accidental. It belongs properly to the Caspian and Red Seas, and, like other large species, occasionally flies out of its native localities.

In Europe it has been observed in the Ionian Islands, in Hungary, and Switzerland. Dr. Leith Adams informs me that it is common on the Delta of the Indus, in the Bay of Bengal, and the Indian Ocean. It is in fact an Eastern species, which occasionally wanders into Europe.

It nests, according to Pallas, in the middle of the downs on the sea-shore. It lays two or three eggs, which are oblong, pale grey, with a number of light or dark brown spots. It feeds on fish, and it has a voice strong and deep, like that of a crow.

As Mr. Ross's description was taken from the bird in the flesh, I copy it from the "Zoologist:"—"Head, entirely, and part of the neck pure black; the rest of the neck, beneath the body, upper tail coverts, ends of scapularies, and secondaries, pure white; the rest of the upper surface of a pale plumbeous grey; quills pure white, with the ends black and the tips white, which latter colour is more prominent on the first quill, while the second has the black also divided irregularly with white near the end; a small white mark above and beneath the eyes; beak at its base livid yellow, with a crimson ring-like spot near the tip, which is fuscous yellow; the feet fuscous red. When first obtained the circles round the eyes were red." The measurements I have given in the specific diagnosis.

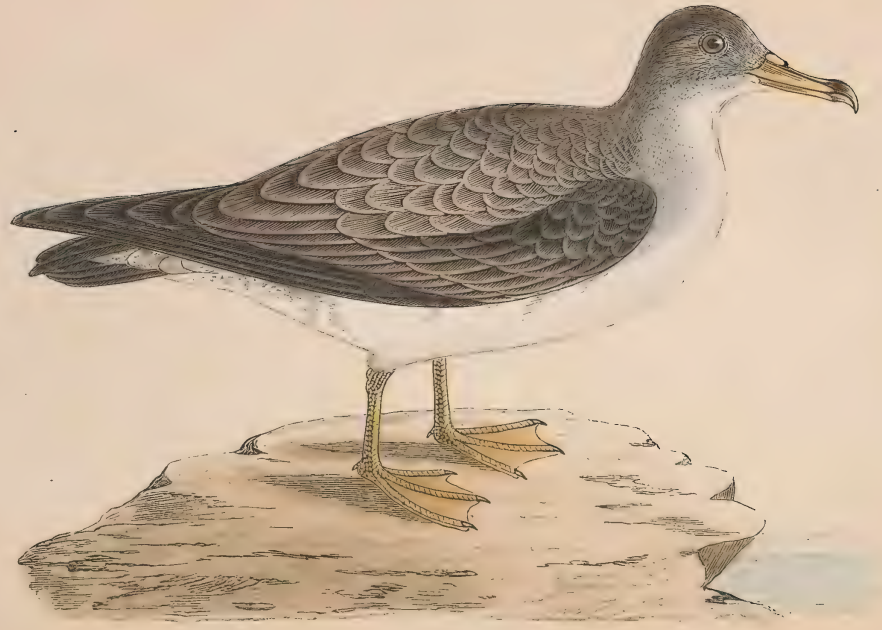
In "Naumannia" for 1856, p. 164, there is an account by J. G. F. Beaumont, of the capture of a bird of this species in the lake of Geneva. It was in the young plumage. He describes it as closely allied to *Larus marinus* (the Greater Black-backed Gull) in its young state; but he says the colouring is clearer, and the beak and feet weaker in *L. ichthyaëtos*. The following is his description of this bird, killed in the end of the year 1848:—

"Throat and upper part of neck clear white. The breast, belly, flanks, and under tail coverts are everywhere dull white, with large bright brown spots on each feather, darker on the sides. Cheeks and sides of neck white, with fine grey brown stripes on each feather; head, neck, mantle, and all the wing coverts greyish white, with brown spots, darker than the under parts. Tail dotted and marbled with very dull brown, the two outer feathers whiter than the others, the two middle feathers almost entirely brown, all barred at the tips with a broadish brown band. Wing primaries blackish brown, with clearer tips; beak blackish; basis of lower jaw flesh-coloured; feet the same; iris clear brown."

Mr. Beaumont then makes some very just remarks about the absurdity of creating the genus *Xema* for dark-headed Gulls with thin beaks, and naively asks, where are we to place this giant of black heads, with the beak of *Larus* and the dark head of *Xema*.

My figure is from the English specimen in the late Mr. Ross's collection, a drawing of which, with Mrs. Ross's consent, has been taken for this work by the Rev. F. Wright, of St. Stythray, Cornwall, to both of whom my best thanks are tendered.

The figure of the egg is from Thienemann.



ALGERIAN CINEREOUS SHEARWATER.

PALMIPEDES.

Family PROCELLARIIDÆ. (Bonaparte.)

Genus PUFFINUS. *(Brisson.)*

Generic Characters.—Beak as long or longer than the head, slender, straight, depressed at its base, very compressed and hooked at its extremity; inferior mandible pointed, and curved at its point like the superior; nostrils basal, oval, opening by two distinct tubes; legs middle sized, almost in the centre of gravity of the body; a small space above the knee naked; tarsi compressed and reticulated; feet webbed; hind toe replaced by a very sharp claw. Wings long, the first primary the longest; tail round or conic, and composed of twelve quills.

ALGERIAN CINEREOUS SHEARWATER.

Puffinus cinereus.

Puffinus cinereus,	CUVIER, *not* GMELIN.
Nectris cinerea,	KEYSERLING AND BLASIUS.
Puffinus kuhlii,	BOIE; Isis, 1835, p. 257.
Procellaria puffinus,	TEMMINCK; Manuel, 2nd. Edition, 1820, and *Puffinus cinereus*, Man., 1840.
Puffin cendré,	OF THE FRENCH.
Grauer Puffin,	OF THE GERMANS.

Specific Characters.—Upper plumage dark brown; lower plumage pure white, with the sides of the neck mottled with grey brown; upper tail coverts light brown, tipped with mottled grey. Length nineteen inches; carpus to tip thirteen inches and a half; beak from gape two inches and a half; depth at base, including nostrils, three quarters of an inch, in middle seven lines; tarsus two inches and a fifth; middle toe two inches and seven tenths.

There has been a good deal of confusion among the Shearwaters, which seems to have arisen from the general resemblance to each other of some of the species, and their sexual differences. Of the Cinereous Shearwaters there are three which have been more or less thus mixed up—the subject of the present notice, *P. major*, and *P. fuliginosa*. It is the latter which has been taken frequently in the British Isles, and from its resemblance to *P. cinereus*, it has generally been described and figured as that bird, although distinguished from it by its smaller size and more slender beak. On the other hand, *P. major* has been taken in Great Britain, and has been figured as *P. cinereus* by Selby and Gould. Mr. Yarrell figures the bird correctly enough, from specimens sent to him by Mr. Mitchell, of Penzance, but in his description he says that he never saw a specimen of *P. major* which exceeded eighteen inches in length, which creates the suspicion of a further mistake, as *P. major* of Faber, the bird which I shall figure and notice next, is upwards of nineteen inches in length,—Degland says upwards of twenty-four inches.

As it is impossible without comparison to form a correct opinion upon the subject, I will figure an undoubted specimen of *P. cinereus* of Cuvier, and also one of *P. major* of Faber; leaving the question whether

either or both have been taken in Great Britain, to be decided by British ornithologists.

The Algerian Cinereous Shearwater, as its name implies, is common on the north-west coast of Africa, and about the Mediterranean and Adriatic Seas.

The Cinereous Shearwater is seen especially in the tempest and the storm. In its habits it is crepuscular, feeding during the twilight or early sunrise, and keeping out of sight during the day. It feeds principally on fishes, worms, molluscs, and crustaceans, which it finds tossed about by the waves on the surface of the ocean.

It builds among the rocks, laying, like the rest of its family, but a single white egg.

The male and female have the head, nape, and scapularies greyish brown, the most inferior of the latter, like the rest of the back, wings, and tail, dark brown; upper tail coverts light brown, edged with finely-spotted white. Primaries black, with the broad part of the inner web white, shaded off to light brown. Cheeks and sides of the neck and chest finely-mottled grey; throat, crop, abdomen, and under wing and tail coverts pure white. Beak yellowish, with the point and hook dark brown. Feet and legs livid yellow; iris brown.

My figure is taken from an Algerian specimen sent to me by Mr. Tristram.

PALMIPEDES.

Family PROCELLARIIDÆ. (Bonaparte.)

Genus PUFFINUS. *(Brisson.)*

ARCTIC CINEREOUS SHEARWATER.

Puffinus major.

Puffinus major,	FABER; Prodromus der Island, 1822.
" "	TEMMINCK; Manuel, vol. iv, p. 507, 1840.
" *cinereus,*	AUDUBON; Nec Auct.
Puffin cendré Arctique,	OF THE FRENCH.
Grosser Grauer Puffin,	OF THE GERMANS.

Specific Characters.—Head and scapularies of the same dark brown as the wings; nape light grey, forming a kind of collar; throat and sides of neck pure white. Length of dry skin from end of beak to tip of tail nineteen inches; carpus to tip of wing twelve inches and a half; beak from gape two inches; tubular nostrils half an inch; tarsi two inches; middle toe and claw three inches.

THIS Arctic species which, according to Yarrell, has been taken in the British Isles, I introduce here for the purpose of comparison with the Algerian species last noticed. They are very distinct, and must not,

ARCTIC CINEREOUS SHEARWATER.

according to the present system of defining species, be considered as varieties of each other, as will be readily conceded on comparing the two figures and the diagnosis of each.

This species is well known in high latitudes, chiefly in the north-west Atlantic. It is very common in Newfoundland, where, according to Temminck, it breeds in thousands, and it occurs occasionally in the north of Europe. It is the lower figure of Yarrell's "British Birds," vol. iii, p. 624, where an account is given of its capture on several occasions in Great Britain. In size and locality it agrees very well with the description of the Wandering Shearwater given by the American writers. Occasionally it is found in the north-west of Europe, but it belongs to the Arctic fauna, and its appearance in our latitudes is purely accidental.

"On approaching the banks of Newfoundland," says Nuttall, "but far west of soundings, we see the soaring and wandering Lestris, and every day the wild Shearwater, but more particularly in blowing and squally weather; sometimes also in fine weather we see them throughout the day. Their course in the air is exceedingly swift and powerful. With their long wings outstretched and almost motionless, they sweep over the wild waves, fearless of every danger, flying out in vast curves, watching at the same time for their finny prey. Like the Stormy Petrel, they are often seen to trip upon the water with extended feet and open wings; they likewise dive for small fish, and find an advantage in the storm, whose pellucid mountain waves bring to view its shining prey to more advantage; it is therefore often seen most active at such times, watching the sweeping billow as it rises and foams

along, harassing and pursuing its quarry with singular address, snatching it from the surface, or diving after it through the waves, on which they are often seen to sit as they mount to the sky, or sink into the yawning abyss of the raging deep."

Like the other Shearwaters, this species lays a single white egg, which I figure from a specimen sent me by Mr. Tristram.

The male has the top of the head, cheeks, and occiput brown black; the nape ash grey; upper part of the scapularies russet brown, the lower brown, fringed with white. Wing coverts dark brown; primaries and tail black, the inner web of the former not so white as in the last described species; upper tail coverts white, mottled in the middle with grey; throat, sides and front of neck, crop, and abdomen, white; under wing coverts grey, light brown, and white; flanks and under tail coverts brown; beak black, lighter below and on the claw-like hook at the end of upper mandible. Feet and legs yellow on the inside, darker brown on the outer aspect; iris, brown.

My figure is from a specimen kindly sent to me by Mr. Tristram, and is from Greenland.

PROTIC CINEREOUS SIDE [illegible]

WANDERING ALBATROSS.

PALMIPEDES.

Family PROCELLARIIDÆ. (Bonaparte.)

Genus DIOMEDEA. *(Linnæus.)*

Generic Characters.—Beak strong and cutting, longer than the head, compressed, straight, and curved abruptly at the point; upper mandible deeply seamed on each side, and strongly hooked at the tip; lower mandible smooth, its end distinct, compressed, and truncated at tip. Nostrils in the furrow, distant from the base, separate, covered on the sides, open in front, tubes very short, partly conical, wider before than behind, lying on the sides of the bill. Feet short and robust; tarsus one fourth shorter than the middle toe; webs full and entire; no hind toe. Wings very long; tail round or wedge-shaped, and composed of fourteen feathers. Sexes alike in plumage, but the young differ much from the adult. They moult twice a year, without changing their colours.—NUTTALL.

WANDERING ALBATROSS.

Diomedea exulans.

Diomedea exulans,	LINNÆUS.
Albatrus,	BRISSON.
Mouton du Cap, or	
Vaisseau de guerre,	OF THE FRENCH.

Specific Characters.—Whitish; back and wings lineated with black; quills black, their shafts yellow; tail lead-colour, (young dusky;) head, wings, and tail blackish; a white space round the eye. Length three to four feet; expanse of wings ten to seventeen feet.—NUTTALL.

Latham describes four species of Albatross, two of which are recorded as visiting accidentally the seas of Europe, namely, the subject of the present notice and *D. chlororynchos*, the Yellow-nosed Albatross of Latham, ("Synopsis," v, p. 309.)

The Wandering Albatross, of which but few naturalists have much personal knowledge, inhabits the Atlantic and Pacific Oceans. Its appearance in European seas is rare and accidental; at least but few instances of its having been seen there are recorded. Degland notices one specimen having been captured at Dieppe about 1830, the head of which is preserved by M. Hardy, the well-known naturalist of that place. Another specimen was killed near Anvers in 1833, and three more in the neighbourhood of Chaumont, in November, 1758. There is also a specimen in the museum at Christiana, which Mr. Tristram informs me he has seen, which was killed off the coast of Norway. Notwithstanding these instances, however, ornithologists have been tardy in admitting this species into the European lists. Nuttall, whose descriptions are always interesting, proceeding, as they did, from an accomplished naturalist, who, like Audubon, earned his reputation in the forests and the prairies, has given an excellent account of this bird. "Vagabond," he remarks, "except in the short season of reproduction they are seen to launch out into the widest part of the ocean, and it is probable that, according to the season they pass from one extremity of the globe to another.

"Like the Fulmar, the constant attendant upon the whale, the Albatross, no less adventurous and wandering, pursues the tracks of his finny prey from one hemisphere into another. Dr. Forster saw them in the middle of the Southern Ocean, six or seven hundred

leagues from land. When the flying fish fail they have recourse to the inexhaustible supply of molluscous animals with which the milder seas abound. They are nowhere more abundant than off the Cape of Good Hope, where they have been seen in April and May, sometimes soaring in the air with the gentle motion of the Kite at a stupendous height, at others nearer the water, watching the motions of the flying fish, which they seize as they spring out of the water to shun the jaws of the larger fish which pursue them. Vast flocks are also seen around Kamtschatka and the adjacent islands, particularly the Kuriles and Bering's Island, about the end of June. Their arrival is considered by the natives of these places as a sure presage of the presence of the shoals of fish which they have thus followed into these remotest seas. That want of food impels them to undertake these great migrations, appears from the lean condition in which they arrive from the south; they soon, however, become exceedingly fat. Their voracity and gluttony is almost unparalleled; it is not uncommon to see one swallow a salmon of four or five pounds weight; but as the gullet cannot contain the whole at once, part of the tail end will often remain out of the mouth; and they become so stupified with their enormous meal, as to allow the natives to knock them on the head without offering any resistance.

"They are often caught with a hook baited with fish, but not for the sake of their flesh, which is hard and unsavoury, but on account of the intestines, which the Kamtschadales use as a bladder to float the buoys of their fishing-nets. Of the bones they also make tobacco-pipes, needle-cases, and other small implements. When caught, however, they defend themselves stoutly

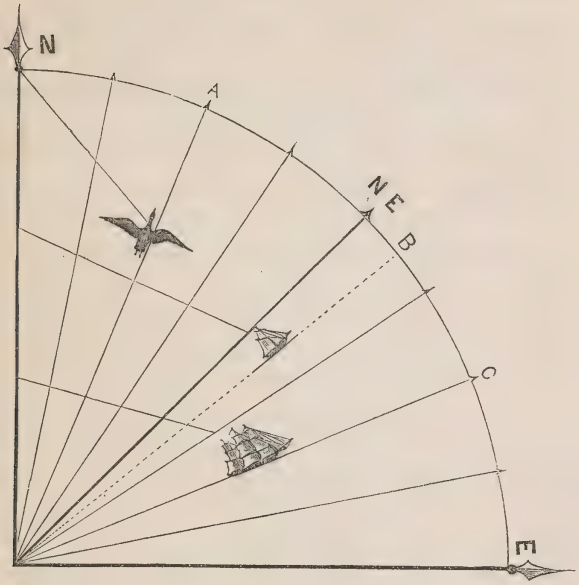
with the bill, and utter a harsh and disgusting cry. Early in August they quit these inhospitable climes for the more congenial regions of the south, into which they penetrate sometimes as low as the latitude of 67°."

In the "Gatherings of a Naturalist in Australasia," by Dr. Bennett, p. 70, et seq., there is a very interesting account of the different species of Albatross which frequent the Australasian seas, especially of the one now under notice, from which I will make some extracts.

"The large species of Albatross varies in plumage more from age than sexual distinction. In some the wings above are of a dark brownish black, with the back most delicately pencilled, and abdomen white; others have the rest of the plumage dark brown, the head and abdomen white. In the movements of this bird there is no laborious effort, but energy and vigour combined with grace is displayed in all its actions. With what elegance it sails along, cleaving the air obliquely, inclining from one side to the other, descending and skimming close to the rolling waves, its huge pinions appearing almost to touch the water! It then soars aloft with equal boldness and facility of action, as if using the aid of the wings as a sail. So rapid are its movements that, having been seen near the ship, before a few seconds have elapsed it has passed far away, still ascending and descending towards the surface of the water, seeking for food, and ranging over an immense space in a very short period of time. Sometimes they may be seen floating upon the water engaged in cleaning their feathers, and thus imparting an additional gloss to their plumage."—(Page 79.)

Further on Dr. Bennett illustrates by the following

diagram the remarkable power which this bird has of flying within two points of the wind, and of tacking like a ship. "The diagram forms the segment of a circle. N is the direction from which the wind is supposed to be blowing; C is a ship sailing within six



points of the wind; B is the course of a cutter which can sail 'close hauled' to within four points and a half of the wind; A is the course of the Albatross, which flies so close to the wind as to keep within two points of the wind, and appears almost to fly against it."

In the Australasian seas Dr. Bennett says the squid or cuttle-fish forms their principal food, after feeding

upon which they would return to the ship, and hover about it apparently without any muscular exertion, steering themselves by the tail and wings. Nature has been prodigal in her gifts to this remarkable bird. Under the feathers there is a quantity of fine down, which protects them from the cold; and the extent and size of air-cells in their bones gives them that buoyancy and lightness which enables them to live almost always on the sea and on the wing.

In the twelfth volume of the "Linnean Transactions" Captain Carmichael, in his "Description of the Island of Tristan du Cunha," has an account of the nesting of this species. It gives itself no trouble in constructing a nest, "merely choosing a dry spot of ground, and producing a slight concavity to prevent the egg from rolling out of its place. The egg is white, very large, and of a peculiar shape, being uncommonly long in proportion to its diameter, and equally thick, or nearly so, at both ends." The young are fed by disgorging from the parent stomach, food never being carried by the mouth; for, as Captain Carmichael remarks, "the blubber of dead whales, seals, and sea lions, would melt away if carried in the bill to any distance." He further adds:—

"We could not help admiring the utter unconsciousness of danger displayed by them on our approach; they never shewed the least disposition to move out of the way; even when kicked or pulled off their nests they made not the slightest show of resistance, but quietly returned to their post or stood still until we passed on. Their plumage is in the finest order, copious, and without the slightest stain. They find great difficulty in getting on wing, and must run twenty or thirty yards along the ground, with expanded wings,

before they can get fairly under weigh. We had the curiosity to take one of them by the point of the wings and fling it over the rock, yet, though it had several hundred feet of a clear fall, it never recovered itself, but dropped down like a stone. On this account, when not engaged with their young, they usually rest upon the edge of the precipice, from which they can launch at once into the air; and on entering again upon that difficult part of our route, we had to kick upwards of a dozen to the right and left of us before we could get on."—("Linnean Transactions," vol. xii, p. 490.)

Dr. Bennett remarks that, although the smaller species of Albatross appears in undiminished numbers, the Wandering Albatross has been more rarely seen during the last few years, not only about the shores of Australia, but in its more general range in the latitudes of Cape Horn and Cape of Good Hope.

The plumage of the Albatross differs with age, but not according to sex. Of seven specimens of the Wandering Albatross, obtained by Dr. Bennett on the 8th. of June, in latitude 37° 15′ south, longitude 16° 27′ east, he says, "The back of five of them was more or less beautifully pencilled with black upon a white ground; the upper part of the wings and scapularies being of a very dark brown; the breast, neck, and abdomen were snow white; the upper part of the head white; back part of the neck dark brown; under surface of the wings white; upper part of the tail feathers handsomely marked with black; the under surface of a delicate white; on each side of the neck, near the occiput, and extending a short distance down, there was a streak of delicate rose tint, which beautifully contrasted with the snowy plumage around it.

This I only noticed in those birds with the black pencillings on the back. In dead specimens this colour fades. When just killed most persons mistake it for blood, and I thought it was at first. Another specimen had the back, scapulars, and wing coverts of a brownish black colour; under surface of wings white, with a few brown feathers; upper part, sides of head, and back of neck brownish black; breast, abdomen, and front of neck delicate snow white.

"The last bird examined was entirely brown, except the upper part of the head, which was white; the breast and abdomen covered with brown and white feathers prettily intermingled."

"The mandibles of all these specimens, when first captured, were of a beautiful pink colour, except at the tips, which were of a yellowish white. The intenseness of the pink hue subsided when the bird was reposing on the deck of the ship; but there still remained a delicate and handsome tint of pink over the mandible. In the dead bird the beak became pallid, and at last changed to the yellowish colour observable in museums." The feet are light bluish; iris brown.

The weight of a Wandering Albatross captured by Dr. Bennett was twenty pounds, while the skeleton only weighed two pounds ten ounces.

My figure of this bird is from Gould's Birds of Australia.

It has also been figured by Buffon, pl. enl. 237; Vieillot, Gallerie des Oiseaux du Museum, pl. 205.

The egg is after a specimen kindly sent by Mr. Tristram.

YELLOW-NOSED ALBATROSS.

PALMIPEDES.

Family PROCELLARIIDÆ. (Bonaparte.)

Genus DIOMEDEA. *(Linnæus.)*

YELLOW-NOSED ALBATROSS.

Diomedea chlororhyncos.

Diomedea chlororhyncos,	GMELIN; Syst., 1788.
" "	LATHAM; Ind., 1790.
Albatros chlororhynque,	OF THE FRENCH.

Specific Characters.—Beak medium sized, black, yellow at the tip, and along the upper ridge and the base of the lower mandible; between the bill and the eyes an obscure black spot, and just over the eye a dusky one. Length three feet; expanse of wing seven feet; bill four inches.

THIS species of Albatross inhabits the South Seas beyond the tropics, and has occurred still more rarely than the last in European seas. Two instances are, however, mentioned by Esmark (Degland, "Orn. Eur.," p. 359,) as having been killed near Kongsberg, in Norway, in the month of April, 1837; and therefore I suppose it is entitled to the place given to it by Bonaparte and Degland among the birds of Europe.

It ranges, according to Latham, from 30° to 60° in

the southern hemisphere, all round the pole, and flies five or six feet above the surface of the sea.

Dr. Bennett, who gives a lengthened account of the "Wandering Albatross," and also mentions the "Sooty Albatross" as occurring in the South Seas, does not allude by name to the subject of the present notice, except as having been figured by Gould among the birds of Australia. He no doubt, however, includes it among the "smaller species," which he states, at p. 77 of his "Gatherings of a Naturalist," when "placed upon the deck, hopped in the same manner as a Gull, aiding their progress by their wings; they would utter a loud hoarse cry when attemps were made to stop them."

In Captain Carmichael's interesting "Description of the Island of Tristan du Cunha," "Linnean Transactions," vol. xii, p. 469, the breeding habits of four species of Albatross are recorded, and it is worthy of note that those habits, at least of three of them, are essentially different, although the birds are so closely allied. *D. exulans* and *D. spadicea* make no nest, merely laying the egg in a depression of the ground. *D. fuliginosa*, the "Sooty Albatross," is gregarious at the breeding-season; Captain C. saw no less than one hundred nests in the area of half an acre. "They are constructed of mud, raised five or six inches, and slightly depressed at the top." *D. chlororhyncos*, on the contrary, "builds its solitary nest in some sheltered corner, selecting the small drains that draw the water off the land into the ravines. There it runs up its nest to the height of ten or twelve inches, of a cylindrical form, with a small ditch round the base."

"A curious circumstance, with regard to this bird, is that when irritated the feathers of its cheeks are

separated, so as to display a beautiful stripe of naked orange skin running from the corners of the mouth towards the back of the head."

All the species lay but one egg.

The following is Latham's description:—"Length three feet; breadth seven. Bill four inches long, hooked at the end, but not very stout; the colour of it is black, except the upper ridge, which is yellow the whole length quite to the tip, where it is hooked; the base of the upper mandible is also yellow; irides brown; the head is grey; between the bill and the eyes is an obtuse black spot, just over the eye a dusky one; the hind part of the neck dusky, the lower part white; back, scapulars, and wings dusky blue black; rump and under part of the body white; the tail dusky; the legs are pale yellowish white; the fore part of them and the webs dusky."

My figure is taken from Gould's Birds of Australia.

It has also been figured by Latham, Syn., vol. iii., p. 309; and Temminck et Laugier, pl. col. 468.

PALMIPEDES.

Family ANATIDÆ. (Bonaparte.)

Genus ANSER. *(Brisson.)*

Generic Characters.—Beak as long as the head, or shorter, conic, deeper than thick, and elevated at its base; mandibles furnished with pointed and conical toothlets, formed by the extremities of the transverse lamina; the inferior narrower than the upper; nostrils median, lateral, and simple; thighs placed in the centre of gravity of the body; tarsi thick and elongated; toes of an average length, hind toe free and elevated; claws short and obtuse. Wings medium sized, simple or armed, first and second primary the longest; tail with sixteen or eighteen quills; lore feathered; neck of average length; trachea without folds or swelling in its lower part.

SNOW GOOSE.

Anser hyperboreus.

Anser hyperboreus,	PALLAS; Spicilegia Zoologica, fasc. 6, p. 20, 1780.
" "	VIEILLOT; Dict. 1818.
" "	LESSON; 1831. TEMMINCK; 1840.
" "	KEYSERLING ET BLASIUS.
" "	SCHINZ. SCHLEGEL.
" *niveus,*	BRISSON; Ornith., vol. vi., p. 288.
" "	MEYER; Tasch. der Deuts., 1806.

SNOW GOOSE.

Anas hyperborea,	Gmelin; 1788. Latham; 1790.
" "	Temminck; 1820.
Chen hyperborea,	Boie.
Oie de neige ordinaire,	Of the French.
Gemeine Schneegans,	Of the Germans.
Wevois or Wavy,	Of the Americans.

Specific Characters.—Forehead much elevated; the sides of the beak divided by longitudinal furrows and toothlets.—Temminck.

Length thirty-two inches; carpus to tip sixteen inches and a half; bill two inches three lines; tarsus three inches.—Nuttall.

In the far-off northern regions of the earth, where snow-covered ground, whether of hill or vale, is the rule of nature; in the bleak and inhospitable wastes of the arctic circle—there it has pleased Providence to locate the bird which is the subject of the present notice. And not more purely white is that eternal snow than, save and except the tips of the wings, is that of this bird's plumage; presenting us with another example of adaptation of colour to that of the creature's home, and of the provision and forethought which has been made and shewn for that creature's protection.

The Snow Goose is an inhabitant of the northern parts of America and Asia, straying accidentally into the interior of Europe, or passing through its eastern parts in its migrations to and from the south. It has occurred in Russia, on the shores of the Caspian and Black Seas, and in the Crimea. It is included among the visitors to Greece by Count Mühle and Dr. Lindermayer. Degland records an instance of its capture in the winter of 1829, in the neighbourhood of Arles; but this was a young subject, and, as we shall presently see, probably a distinct species. Temminck says it

occurs accidentally in Prussia and Austria, but never in Holland; and Naumann includes it in his work on the "Birds of Germany." A reported instance of its capture in England is mentioned by Degland, but it appears that M. Hardy, of Dieppe, satisfactorily proved that the specimen was not killed in this country.

Brisson described the Snow Goose ("Ornith.," vol. vi, p. 288,) as *Anser niveus*. He also described another bird, at p. 275 of the same volume, as *Anser sylvestris freti hudsonis*, which had previously been described by Linnæus as *Anser cærulescens*, ("Syst. Nat.," tenth edition,) and which had also been figured by Edwards as the "Blue-winged Goose," (vol. iii, pl. 152.) Latham, writing thirty years after Brisson, describes the young of the Snow Goose as blue until it was a year old; and Temminck, in his "Manuel," 1820, vol. ii, p. 817, described the young bird as differing from its parent materially until it attained the age of four years, and at the same time pointed out that in this immature plumage it was the *Anas cærulescens* of Linnæus, and the *Anser sylvestris freti hudsonis* of Brisson. So it has remained since his day. The American writers, who ought to have been well acquainted with the bird, have all followed Temminck and the other European ornithologists. Nuttall says, ("Ornithology of United States," p. 345, vol, ii,) "It is said the young do not attain the full plumage of the old birds before their fourth year, and until that period they appear to keep in separate flocks."

All this, however, is positively denied by Mr. George Barnston, of the Hudson's Bay Company, whose opportunities of practical observation in Hudson's Bay, the great locality of the Snow Goose, have been very

considerable. In a paper published in the "Ibis," vol. ii, p. 253, entitled "Recollections of the Swans and Geese of Hudson's Bay," Mr. B. denies that *A. cærulescens* is the young of *A. hyperboreus*. He says, "The friendly intercourse that exists between these Geese (Snow Geese) and the Blue Wavies, the *Anser cærulescens*, has perhaps induced some to suppose that they were merely varieties; but this is a mistake. The young White Wavies arrive from the north with their parents, without mixture of other Geese in the flocks; and they have the same white garb as the old birds, but with the head as if it had been soiled with rust of iron, and the bill, as is well known with young birds, tender, soft, and compressible; while, on the other hand, *A. cærulescens* comes down upon the eastern coast also in perfectly distinct flocks, the young birds having a more diffused and darker blue colour, as well as being of smaller size, with the beak more tender. About this there can be no mistake. In the spring James's Bay is frequently crossed by both species of Wavy at Capes Jones and Henrietta Maria; and occasionally two or three Blue may be seen in a large flock of White on the Albany shore, while two or three White may also be observed accompanying the full flocks of Blue on the east main side; but this is not singular, as their cry is almost the same, and they are certainly closely-allied species—but not varieties."

These observations seem to throw much light upon this hitherto somewhat obscure question. It certainly would have been a remarkable fact in ornithology if it could have been proved that any of the *Anatidæ* were four years in attaining their full plumage.

If Mr. Barnston is correct in the inference he has drawn, and I must say I think there is every reason

to consider that he is, then we must add another bird to the European list, as there can be no doubt that *A. cærulescens* has been found as frequently in Europe as the Snow Goose.

The Snow Geese breed in great numbers in the wastes of Arctic America, frequenting, according to Richardson, the sandy shores of rivers and lakes, and are very watchful, employing one of their number usually as a sentinel to warn them of any approaching danger.

The eggs are yellowish white, and, according to Nuttall, a little larger than those of the Eider Duck, their length being three inches, and their greatest breadth two.

"The young fly about the close of August, and the whole depart southward about the middle of September. Early in November they arrive in the River Delaware, and probably visit Newfoundland and the coasts of the Eastern States in the interval, being occasionally seen in Massachusets Bay. They congregate in considerable flocks, are extremely noisy and gabbling, their notes being shriller than those of the Canada or Common Wild Goose. They make but a short stay in the winter, proceeding south as the severity of the weather increases. They begin to return northwards by the middle of February, and until the breaking up of the ice in March, are frequently seen in flocks on the shores of the Delaware, and around the head of the bay. At this time they are observed to feed on the roots of the reeds, tearing them up like hogs. In their breeding resorts in the fur countries they crop rushes, and collect insects and (in autumn principally) berries for food, particularly those of the crowberry, *(Empetrum nigrum.)* At this time they

are seldom seen on the water, except in the night or when moulting. When well fed the flesh is excellent, being far superior to the Canada Goose in juiciness and flavour."

They are also very abundant in Siberia, forming an article of subsistence to the natives, by whom they are taken in decoys in great numbers, which are buried in the earth, and being frozen, keep very well, thus preserved, till they are "wanted for the table."

Mr. Barnston has, in the article from which I have before quoted, given a very interesting account of the migration of these and other Geese, and of their great slaughter by the natives. He calculates, and gives the basis of his calculation, that, excluding the Brent Goose, nearly eight hundred thousand Geese leave the coasts east of the Rocky Mountains for the place of their hybernation. Supposing that each Goose flies one yard apart, this would give a string four hundred and fifty miles long, and supposing "the rate of flight was forty miles an hour, and the line led by one going straight south, they would take eleven hours in passing any given object." Of this number he calculates that sixty thousand are shot at the various stations.

"In the fall, on some days, when the flocks of young Wavies are numerous, and passing southwards, it is no uncommon thing for a good shot to send one hundred to his lodge between sunset and sunrise. In such cases he generally has two guns in the willow and grass stand or concealment, and his wife or son loads while he attends to the motions of the Geese, brings them round to the bush or wooden decoys by calling, and fires as they pass. These Geese form the staple article of food for rations at the Albany factory.

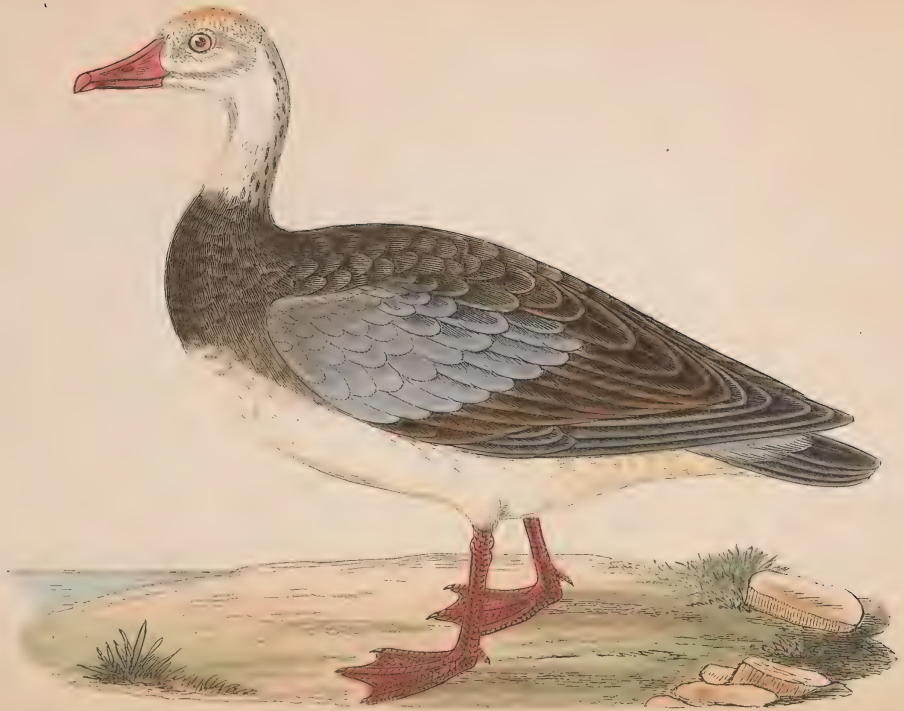
They are the last to leave the coast for southern climes about the end of September, some weak broods and wounded birds lingering to the first week of October. They are deliberate and judicious in their preparations for their long flight, and make their arrangements in a very business-like manner. They leave off feeding in the marshes for a day or more, keeping out with the retreating ebb tide, and retiring as it were by steps unwilling at its flow, adjusting their feathers continually, and dressing them with their fatty oil. They are then ready for the first north or north-west wind that blows; and in twenty-four hours the coast that had been resonant with their petulant and incessant cries, and covered patch-like by their whitened squadrons, is silent and deserted—a barren and frozen shore."

The general plumage of the Snow Goose is white; forehead yellowish; primaries white at their base, and black on their distal half. Iris, hair brown; beak, feet, and orbits red, the inferior mandible lighter, and the nails of both blue.

According to all modern authors, the young is described as the species the diagnosis of which will follow this. According, however, to Mr. Barnston, as above quoted, the young are white, with their heads stained with ferruginous.

My figure of this bird is taken by kind permission from the beautiful plate of Mr. Gould, in his Birds of Europe.

Figures will also be found by Wilson, American Ornithology, vol. viii, pl. 68, fig. 5; Naumann, Vogel Nacht., pl. 23, fig. 46.



BLUE-WINGED GOOSE.

PALMIPEDES.

Family ANATIDÆ. (Bonaparte.)

Genus ANSER. *(Brisson.)*

BLUE-WINGED GOOSE.

Anser cærulescens.

Anser cærulescens,	LINNÆUS.
" *sylvestris freti hudsonis,*	BRISSON.
" *hyperboreus, jun.,*	AUCTOR.
L' oie des Esquimaux,	BUFFON.
Blue-winged Goose,	EDWARDS.
Blue Wavy,	OF THE AMERICANS.

Specific Characters.—General colour grey, white below; wing primaries and lower part of back clear ashy blue.—LINNÆUS.

Length thirty-one inches; beak two inches; tail five inches and a half; bare part of thigh seven lines; tarsus three inches; middle toe three inches; external toe two inches ten lines; internal toe two inches nine lines; hinder toe nine lines. The wings, when closed, extend to three fourths of the length of the tail. —BRISSON.

HITHERTO confounded with the young of the Snow Goose, I have much pleasure in restoring this bird to the place which was assigned to it by Linnæus and that equally accurate observer Brisson. In the notice of the last bird, the Snow Goose, I have given the authority upon which I have done this. Mr. Barnston

speaks from his own practical knowledge, gained on the spot, which, of all others in the world, is that most frequented by these birds. He says, "About this there can be no mistake," namely, that *A. hyperboreus* and *A. cærulescens* are distinct, though closely-allied species. The latter bird he says is "of all the Geese enumerated the least known, and it is possible frequents in summer only James's Bay and the east main of Labrador, at the extremity of which peninsula it hatches. Of its winter haunts I cannot speak with certainty, not having seen them either on the Columbian or on the north-west coast. It may be that they adopt the sea-coast in a lower latitude as a home, and are to be found towards Southern Mexico."

"By an Indian report a great breeding-ground for the Blue Wavy is the country lying in the interior from the north-east point of Labrador—Cape Dudley Digges. Extensive swamps and impassable bays prevail there; and the Geese incubate on the more solid and driest tufts dispersed over the morass, safe from the opproach of man or other than a winged enemy."—("Ibis," vol. ii, p. 257.)

As to its European locality we may speak confidently of many instances in which it has been called the young of the Snow Goose. Thus, the two specimens described by Temminck in his "Manuel," vol. ii, p. 817, must be referred to this species, and in fact are so mentioned by that author, but with the reservation that *A. cærulescens* is the young of *A. hyperboreus*.

The birds described in the following extract from Count Mühle's work on the birds of Greece, are, in all probability, referable to this species:—"Very rare among the Geese which come into Greece. They were observed by my friend Lieut. Dillmann, who shot in

the severe winter of 1841 three of these birds in the lagoons of Emirbey, between Stilida and Thermopylæ. Their white plumage was mixed with greyish feathers, and their feet and beak were blue grey. These specimens were we think the same as figure 3 of Naumann's plate."

The following is Brisson's description:—"Head and neck for nearly all its length is white, the top of the head, however, is russet, and the upper part of the neck is spotted with blackish; base of the neck, the upper part of the back, the scapularies, the crop, and the flanks are of a sombre brown; inferior part of the back, the rump, and upper tail coverts of a bright bluish ash. The abdomen, the upper part of the thighs, and under tail coverts are white, slightly shaded with brown; all the wing coverts bluish ash; primaries blackish; secondaries of the same colour, but are bordered with ash on their external web, and at their tip. Tail composed of eighteen feathers, of a dull brown, bordered with ash; the two middle slightly longer than the laterals, which diminish gradually in length to the most external, which is the shortest, which thus give roundness to the end of the tail; the beak, and that part of the thigh uncovered by feathers, the tarsi, toes, and webs are red, with the claws black. It is found in Hudson's Bay."

The following is Latham's description:—"Male rather less than a tame Goose. Bill red; iris deep chocolate; crown of head yellowish, as though singed; rest of head and neck white, the last spotted all the way down at the back part with black; lower part of the neck, all round the breast, sides, under the wings, and back dark brown, palest on the breast; wing and tail coverts pale bluish ash-colour; scapularies and tail

striped white and grey; greater quills dusky; belly, thighs, and vent white; legs red.

The female has the upper mandible black; base of lower lead-colour, with the tip black; forehead white; between the bill and eye blackish; inner half of each tail feather white, the outer black.

Hab., America. Hudson's Bay. In summer numerous at Albany Fort. Known there by the name Catb, catue, We We."

My figure is taken from Edwards' plate.

It has also been figured by Wilson, Amer. Ornith., vol. viii, pl. 69, f. 5.

LITTLE WHITE-FRONTED GOOSE.

PALMIPEDES.

Family ANATIDÆ. (Bonaparte.)

Genus ANSER. *(Brisson.)*

LITTLE WHITE-FRONTED GOOSE.

Anser erythropus.

Anser erythropus,	A. NEWTON; Ibis, vol. ii, p. 406, 1860.
" *finmarchicus,*	GUNNER; in Leemii de Lapponibus Finmarchiæ, Comm. Notes, p. 264, 1767.
" *minutus,*	NAUMANN; Naturgesch. der Vögel Deutschlands, vol. ii, p. 365, pl. 290, 1842.
" *temminckii,*	BOIE; Isis, p. 882, 1822, (young,) et Auct., (adult.)
" *cineraceous,*	BREHM; Beitr, iii, p. 875.
" *medius,*	TEMMINCK; in Meyer's Taschenb., vol. iii, p. 251.
" *brevirostris,*	HACKEL.
" *albifrons,*	TEMMINCK; (young of *A. minutus,* Naumann.)
Anas erythropus,	LINNÆUS; Syst. Nat., ed. 10th., 1758.
" *cinerea fronte-alba,*	Faun. Suecica, No. 92, 1746.
Oie naine,	OF THE FRENCH.
Zwerggans,	OF THE GERMANS.

Fjæll-gas,	Of the Swedes.
Finmarke-gaas,	Of the Finns.
Dwarf-Goose,	Of English Writers.

Specific Characters.—Beak orange, and very small; primaries grey, tipped with black, the shafts white; secondaries and tail quills blackish, the latter bordered with white. Length twenty-two inches.

We are indebted to Mr. Alfred Newton, in an able paper read to the Zoological Society on the 26th. of June, 1860, and reprinted in the "Ibis" of that year, for clearing up the confusion which existed in the nomenclature of this bird. In this paper Mr. Newton clearly establishes the fact that the Little White-fronted Goose is the true *Anas erythropus* of Linnæus, (Syst. Nat., ed. 10, p. 123, No. 7,) and the *Anser cinerea fronte-alba*, No. 92 of the "Fauna Suecica," published in 1746.

This name, *Anser erythropus*, has been applied by most modern ornithologists to the Greater White-fronted Goose, *(Anser albifrons,)* and by Pennant, Latham, and others to the Barnicle (which has black feet) as well. I trust, however, that in all future histories of these birds the synonyme will be omitted, and the specific name *erythropus* applied solely to the subject of the present notice.

Mr. Newton's paper being reprinted in the "Ibis," I shall merely here give a resumé of the arguments by which the above facts have been established. It appears that the late lamented Mr. Wolley was only able to find in all his researches in Lapland, two species of Wild Goose inhabiting that extensive district. These Geese were known to the Finns as the "Isohani" or Great Goose, and the "Killio-hani" or Mountain

Goose. The former he found was the well-known Bean Goose, and the latter, to his surprise, he found what he termed the small race of the White-fronted Goose, the *Anser minutus* of Naumann. This fact was more surprising to him because he had been assured by the Swedish naturalists that the Mountain Goose was *A. leucopsis*, or the Barnicle, to which Pennant and Latham had erroneously applied the name *erythropus*. Mr. Newton, carrying on his researches, shews that some of the Swedish naturalists were aware that the Mountain Goose was not *A. leucopsis*, as Zetterstedt, in his Travels in Lapland, (Resa genom Sweriges och Norriges Lappmarker af Joh. Wilh. Zetterstedt, 2 vols. 8vo, Lund., 1822,) as well as Gunner, in some notes to Leem's work upon Lapland, points out, (as indicated by Mr. Wolley in his catalogue of eggs published in 1857,) that this Mountain Goose was a distinct species, to which he gave the name of *Anser finmarchicus*.

Mr. Newton has kindly sent me an extract from Leem's work and Bishop Gunner's notes in Latin, of which the following is a translation:—"In Eastern Finmark it is said there is found a certain species of Wild Goose, distinct from others both in colour, and in being of a smaller size. They are characterized by their dark brown back, white belly spotted with black, and a white collar about the eyes. The flesh of this kind is not of a disagreeable flavour, nor do their eggs differ much in goodness from those which domestic geese lay." Upon this Bishop Gunner makes the following note:—"This lesser species is commonly called Finmarke-Gaas—the Finmark Goose, and is much less than the *Anas anser*, (Grey Lag,) but about the size of the Eider Duck, (*A. mollissima.*)

The beak is, however, shorter than in either of these. Nay, the beak of the Grey Lag is twice as large and long. The forehead is white, from whence also a white band descends, reaching to the bend of the upper mandible on both sides. Head and neck fuscous, with a blacker vertex. The temples are black; but the cheeks and inner part of the throat are sometimes of a paler colour. The beak is yellow, and the feet are red. There can scarcely be a doubt that this *A. finmarchicus mihi*, which has just been described, is the *Anas erythropus 'cinerea fronte-alba,'* Fauna Suecica, 116, and *Anas helsingegaas* of Clausius, in Exot., 368.

"In 'Ornith. Brünnichii,' p. 13, No. 54, there is a variety of Wild Goose from Cimbria, with a forehead all white, and the abdomen spotted with black, which variety is the Trappe-gaas, or Laughing Goose of authors. Our *A. finmarchicus* or *A. erythropus* might easily be confounded with the variety of Brunnich did the size permit."—From pages 264-65 of "Canuti Leemii Professoris Linguæ Lapponica, de Lapponibus Finmarchiæ," etc., commentatio, etc.: una cum J. E. Gunneri, Episcopi Diocees, Nidors, (Throndjem,) and S.S. Theologiæ Doctoris Notis, etc. Copenhagen, 1767, 4to.

As therefore neither *Anser leucopsis* nor *A. albifrons* occur in Lapland, nor in the district mentioned by Linnæus, the fact seems fully established that *A. erythropus* is the subject of the present notice, as made out by Mr. Newton. In a private letter to me M. De Selys-Longchamps expresses the same opinion.

The Little White-fronted Goose inhabits Lapland, Sweden, Norway, and Finland, and has been captured in Hungary, Germany, Holland, and Belgium, according

to M. Dubois, (Ois. de la Belgique, No. 139,) who records an instance of its capture near Brussels in 1858. It also occurs in Greece. Count Mühle says, "I have often found this pretty little Goose in Greece. In size it scarcely exceeds the Common Duck. I believe that it breeds in Greece, since I have for many years shot the old female in the month of June, when all foreign Ducks and Geese have long disappeared. They remain constantly in the swamps, which are thickly overgrown with reeds and rushes, and were with trouble hunted out (probably from the nest) by dogs."

Lindermayer says that neither he nor Erhardt were fortunate enough to procure specimens in Greece, but admits it is often seen in the markets at Athens, which places its occurrence in Greece beyond all doubt.

Though its general appearance is very similar to that of the White-fronted or Laughing Goose, the subject of the present notice is easily distinguished by its smaller size and more delicate form; the wings are also proportionally larger and more pointed. Their manners and habits of flight are very similar to those of Geese in general. In their long migrations they form an oblique line, one after the other; and M. Dubois states that they will sometimes follow flocks of Harvest Geese, at the same time keeping at a distance from them. If these last fly down on a field or piece of water, they also stop, but they do not then approach nearer their companions of the voyage than while travelling. They are very fond of swimming about, which they do with great agility. They feed upon roots, grain, and water lentils. They are not very wild, but at the same time cautious, and keep at a long range from the sportsman's gun.

I am sorry Mr. Wolley has not given us more particulars of their breeding habits in Lapland. The eggs are scarce in collections, and smaller than those of *A. albifrons*. I am able, through the kindness of Mr. Tristram, to figure a genuine specimen.

The adult male and female have the top of the head, forehead, throat, and front of cheeks, and the under and upper tail coverts, pure white; rest of the head, neck, and crop, grey, with those parts nearest the white front of the head darker; scapularies and back dark brown grey, with transverse lighter bands; upper wing coverts blue grey; lower same colour as the back, edged with white; primaries same blue grey as the upper coverts; secondaries black; tail grey, margined with white at the tip, and white at the base; abdomen black, bordered with white; and the flanks the same dark grey brown as the back, each feather edged with lighter, and separated from the edge of the wing, when folded, by a white streak; beak orange; feet and legs red.

In the young bird the white of the forehead is replaced by hair brown; and all the under parts are brown, the white and black plumage being entirely absent.

It has been figured by Naumann, pl. 291, and a very good drawing of the old and young bird is given in Dubois' Birds of Belgium, part 139, pl. 294.

CLICKING TEAL.

PALMIPEDES.

Family ANATIDÆ. (Bonaparte.)

Genus Anas. *(Linnæus.)*

Generic Characters.—Beak broad, flattened in the greater part of its length, with mandibles pectinated on the edges. Nostrils basal, oval, covered by membrane. Tarsi short, compressed, placed rather under the centre of the body; anterior toes of medium size; hind toe without pendant lobe or membrane. Wings medium size, rather long, narrow, and pointed; tail conic. The body is boat-shaped; windpipe more or less enlarged, and ossified at its bifurcation. Sexes differ in plumage.

CLUCKING TEAL.

Anas glocitans.

Anas glocitans,	Pallas; Acta Stockholmiensia, 1799, vol. xl, pl. 33, f. 1.
" "	Temminck; Manual, vol. iv, 2nd. edit., p. 533, (excl. synon.,) 1835.
" "	Brandt; Animalium Rossicorum novorum, fascic 1, p. 28, pl. 4.
" "	Middendorff; Sibirische Reise, vol. ii, p. 230.
" "	Schrenck; Vogel des Amur-Landes, 1860.
" *formosa,*	Temminck et Schlegel; Faun. Japon.
Canard Glousseur,	Of the French.

Specific Characters.—Two large quadrangular patches of fawn-colour, separated by a black band bordered with white, on the side of the head; from the eye a band of rich glossy green extends backwards, and, passing round the occiput, forms a demi-collar. Speculum black, edged with white, and above with dark glossy green and russet; lower part of the flanks near the tail terminated by a broad transverse band of pure glossy silvery white, (male.) Tail with sixteen quills. Length of male fifteen inches and a half; carpus to tip eight inches and a fifth; tarsus one inch and three tenths; middle toe and claw one inch and three tenths; beak from forehead one inch and a half; from rictus one inch and four fifths; breadth of beak below three fifths of an inch. Female.—Length fifteen inches; carpus to tip seven inches; tarsus one inch and one tenth; middle toe and claw one inch and three fifths; beak from forehead one inch and three tenths, from rictus one inch and a half; breadth of beak below half an inch.

This beautiful Teal must not be confounded with the Bimaculated Duck of the English authors. Pennant, it is true, identified his bird of that name with the *Anas glocitans* of Pallas, ("British Zoology," vol. ii, p. 602, pl. 100, fig. 2, ed. 1776.) Yarrell, ("British Birds," first and second edition, vol. iii, p. 260,) figures a Duck as the Bimaculated Duck of Pennant, and describes it as identical with *Anas glocitans*. This bird was, however, a hybrid between the Pintail and the Wigeon, and in the last edition of Yarrell's work has been very properly withdrawn. In the fourteenth volume of the "Linnean Transactions," Mr. Vigors describes a male and female Teal, taken in a decoy at Maldon, in Essex, as the true *Anas glocitans*, and the Bimaculated Duck of Pennant. But he makes this identification on the authority of Pennant, expressing himself a doubt whether they are the same, as his specimen differed from the figure in the "Acta Stockholmiensia," and at the same time admitting

that Pennant's figure was a very good representation of his male bird, though they differed in the numbers of tail feathers, that of Pennant having only twelve, while Mr. Vigors' specimens had both sixteen. Nothing has ever been known about Pennant's specimen, said to have been "taken in a decoy in 1771, and communicated to me by — Poore, Esq."

By comparing, however, Pennant's figure with that of the true *Anas glocitans* of Pallas, which, through the kindness of Mr. Tristram, I have the opportunity of figuring, it will be at once perceived that the birds are totally different, and consequently that neither the figure of Pennant nor Yarrell, nor the description of Vigors in the "Linnean Transactions," refer to the true *Anas gloticans*, of whose capture in England we have no proof whatever. This will not now admit of the slightest doubt. I have therefore thought it better to drop the word Bimaculated altogether, as applied to the *Anas glocitans*, and to translate the specific word *glocitans* into the perhaps less euphonious, but more expressive name of "Clucking," which was applied to it owing to the note being similar to the "cluck" of a hen.

The "Clucking Teal" is an inhabitant of the cold and inhospitable wastes of the far north. It is a form more truly indigenous to Siberia and the northern parts of Russia than to any other country. In Siberia it was found by Pallas on the borders of Lake Baikal and the banks of the Lena. Its range extends to the Amur-Lande, Japan, and China.

From a recent notice of it given by Dr. Leopold V. Schrenck, in his "Vogel des Amur-Landes," published at St. Petersburgh in 1860, I extract the following:—"The Amur specimens of this beautiful

Duck agree fully with Siberian specimens in our museums, with the known descriptions of Pallas, Brandt, and Middendorff, and with those of Temminck and Schlegel in the "Fauna Japonica." In the breeding plumage of the Amur male, the fawn-coloured patches on the cheeks and sides of throat vary in being darker or lighter."

"In Amur-Lande *A. glocitans* is much less plentiful than the Common Teal, *(Anas crecca,)* and it appears later in the month of April: Middendorff first saw it in May. I shot a young individual on the 31st. of August, (Sep. 12th.,) 1854, with fully-developed wings. I met with small flocks of young individuals in the late summer of 1856, on the Upper Amur, as far as the Ustj-Strelka rather often. A specimen was brought to me from the upper Dseja on August 16th., (28th.;) it was a dead fully-grown male still in its summer plumage, having been driven down by the stream: it was stiff, but quite fresh."

Middendorff, in his "Sibirische Reise," vol. i, part 2, p. 230, gives a long and interesting account of this Teal, from which I extract the following:—"Although the most common species of Duck on the Boganida, (70° north latitude,) it does not nevertheless extend upwards as far as the river Taimyra. They were not observed on the Boganida before the 12th. of June. On the 3rd. of July seven fresh-laid eggs were discovered in a nest under a willow bush adjacent to the bank of the river. On the 24th. of July the feathers on the head, on the shoulders, and on the wings of the downy young ones had already commenced making their appearance; but nevertheless on the 4th. of August they were unfledged. On the 28th. of July a male was shot which had already put on the plumage

1. CLUCKING TEAL.

2. LITTLE WHITE-FRONTED GOOSE.

of its sex. The last bird of this species remained on the Boganida until the 23rd. of August."

"This species likewise frequently appeared in the Stanowoj Mountains on the river Aim, and in Udskój-Ostróg, where they arrived in the early part of May."

"The eggs are small, and of a bluish yellow colour, the smallest being fifty millemetres (two inches, English) in its long diameter, and thirty-five millemetres (or one inch and two fifths, English) in its lesser diameter."

"In whatever numbers collected together, these birds were very shy, but less so, however, when paired. They make a horrible noise while they uninterruptedly cause their loud quacking (clucking?) notes to be heard."

I have much pleasure in giving a copy of one of the eggs alluded to by Middendorff in the above extract from his interesting work.

The adult male in breeding plumage has the forehead, vertex, and occiput of a rich purple brown, the feathers forming a distinct crest; this crest is bounded on each side by a white narrow band from the anterior angle of the eye to the occiput; beyond this white band there is a rich glossy green band, extending round the nape, and thus forming a demi-collar; the cheeks and sides of the head are occupied by two quadrangular patches of fawn-coloured feathers, separated by a black white-bordered band, which extends obliquely from the lower eyelid to the posterior border of the large oval black patch on the throat; another black band extends from the posterior angle of the green collar to the side of the neck obliquely, being parallel to the anterior band, and forming the posterior border of the second fawn-coloured patch, which latter extends broadly in front of the gular black spot, and

separates it from the breast; posteriorly the green demi-collar is also bounded by a black band, mingled laterally with silver-white feathers, which separates it from the neck posteriorly. From the nuchal black band to the scapularies, the neck posteriorly is marked by very finely-marbled grey with a line of darker brown feathers down the centre; the scapularies, which are long and dependant, are above rich hair brown, becoming below darker, bordered more or less with white or brown, the outer feather on each side being long and pointed,—its outer web velvet black, bordered with russet brown, and its inner web pure silvery white; upper tail coverts brown, flanked on each side by a broad silvery band; tail dark brown. Between the scapularies and the upper wing coverts there is a line of finely-marbled grey, continuous with that on the posterior part of the neck; upper wing coverts rich hair brown, the lowest being long, broad-pointed, and dependant, having their outer webs edged with a fawn-coloured streak, on the outside of which is a velvet black border; the speculum formed by the secondary quills and lower coverts has above an ochreous edging, then glossy green, in the middle velvety black, and beneath silvery white; primaries, of which the second is the longest, brown, darkest on their outer web and tips. The throat is velvety black, and separated from the chest by the above-mentioned fawn-coloured band; upper part and sides of chest vinous purple, faintly spotted with black; crop and sides lighter vinous-colour, distinctly and thickly spotted with round black spots, which grow fainter as they go downwards. Abdomen white; flanks marbled grey above and below, white in the middle; under wing coverts clear brown, some of the feathers edged with pearly white; under tail coverts

velvet black tinged with purple, bordered laterally with ochreous, and terminating nearly at the end of the pointed tail with light spotted grey. Beak black, with the nail glossy brown; feet and legs light brown.

The female is a plainly-coloured bird, having all the upper parts rich brown, the feathers on the back being bordered more or less broadly with russet; primaries brown, the speculum having the upper russet border as broad as the other, the four colours—russet, green, black, and white—succeeding each other in about equal proportions; sides of the head and neck marbled grey; throat white; chest rich brown, with darker oval and irregularly-shaped spots; middle of the abdomen dirty white; lower part and under tail coverts the same, but thickly spotted with brown; flanks in large spots of two shades of brown; beak black, with the nail brown; feet and legs light brown.

I have the greatest pleasure in giving correct drawings of the male and female of this rare European bird, the specimens having been obtained at great cost by Mr. Tristram, through Dr. Middendorff himself, from the Caspian Sea.

PALMIPEDES.

Family ANATIDÆ. (Bonaparte.)

Genus ANAS. *(Linnæus.)*

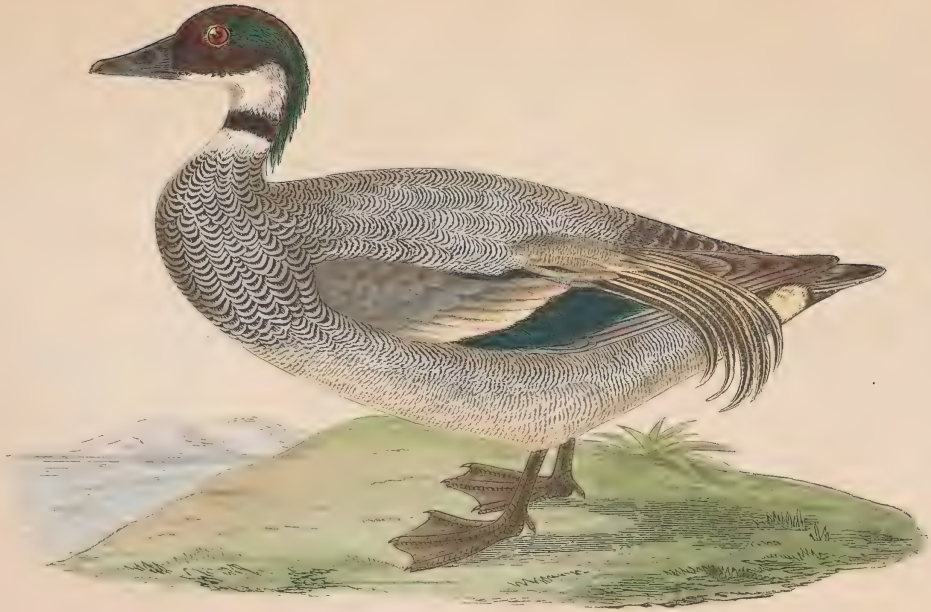
FALCATED TEAL.

Anas falcata.

Anas falcata,	PALLAS. LATHAM.
" "	MIDDENDORFF. SCHRENCK.
" *drepanopterus,*	MESSERSCHMIDT. BRANDT.
Querquedula falcata,	BONAPARTE.

Specific Characters.—Male.—Top of the head and cheeks a rich metallic brown; sides of the head and nape metallic green; the feathers of both these regions being prolonged at the nape, so as to form a crest of brown and green; a black collar round the pure white neck. Five or six of the scapularies on each side very long and strong, and extending in a falcated or sickle-shaped form over the wing. Length (male) nineteen inches; carpus to tip ten inches; longest sickle-shaped scapular feather eight inches; beak from rictus two inches; breadth at base five eighths of an inch; tarsus one inch and a half; middle toe and claw two inches.

THIS very beautiful Duck is an Asiatic species, inhabiting Siberia and Amoor Land in considerable numbers. Its title to a place in the European list rests upon its accidental appearance in Sweden, Hungary, and Germany. The Prince of Canino records a



FALCATED TEAL.

fine male specimen as having been captured in the neighbourhood of Vienna, and he gives Hungary as its European locality in the "Conspectus Avium Europæarum." Mr. A. Newton is my authority for its occurrence in Sweden.

As an accidental and extremely rare visiter only can this elegant bird be admitted into the European avifauna. Its real home is in the eastern part of Siberia, from the River Jenisei to the Lena, and beyond Lake Baikal, as stated by Pallas in his travels, vol. iii, p. 701, and in the "Journey to Georgia," 1772, p. 168. Latham says it probably winters in the Mongolian deserts, and he states that he received a live specimen from China, which lived for some time among "other poultry, and was pretty familiar." Middendorff, in his "Siberische Reise," vol. ii, p. 231, gives an account of it in Siberia, and figures the female and its egg. More recently, Dr. Leopold Von. Schrenck has given a long and somewhat prolix history of the young birds as he observed them in the Amoor Land, ("Vogel des Amur-Landes," vol. i, part 2, p. 476.) From this work I quote the following:—

"*Anas falcata* is a very plentiful Duck in Amoor Land. According to Pallas it first appears in Siberia in the spring, and I shot my first specimen near Nikolajevschen Posten, on the 6th. (18th.) of May, 1855. It might probably have been found there about the end of April, since Middendorff notes its appearance at Udskoi-Ostrog as early as the 3rd. of May, and at Utschur on the 14th. On the 28th. of May, (June 9th.) I found *A. falcata* at Borbi, on the upper part of the Marünskischen Posten, already paired, and the male in full breeding plumage. In the summer of 1856 I shot an old male, on the 1st. (13th.) of June,

on the Jaï-Flusse, which appeared to be without a mate, and had probably already bred. More than a month later, on the 6th. (18th.) of July, 1855, Herr Maack killed an old female near the mouth of the Ssungari-Mündung, which certainly had a very worn and faded plumage, but yet shewed no trace of moulting. Middendorff observed the young near Udskoi-Ostrog on the 4th. of August, with the wing feathers just sprouting out, and I shot a similar specimen on the 22nd. of August, (September 3rd.,) near the mouth of the River Komar, but I found young ones near the Nikolajevschen Posten on the 8th. (20th.) of September, with fully-developed wings, and on the 19th. of September they had no trace of breeding plumage." "I killed three specimens in a few minutes, one after the other, as they swam towards me when hidden on the banks of the river."

Middendorff says,—"This Duck nested abundantly in the Stanowoj Mountains, as far up as the immediate neighbourhood of the ridges themselves."

The adult male in breeding plumage has the forehead, top of the head, and cheeks a rich brown, the latter tinged with metallic green; from the eye extending backwards to the occiput and nape, where they unite and form a crest, is a broad band of rich metallic green feathers; the neck and throat are pure white, surrounded by a rich velvet black collar; upper part of the back, chest, and upper wing coverts grey and white, in zigzag, more or less curved, and circular lines; upper wing coverts grey, terminating above in black, below in much lighter mottled grey, while five or six of the feathers rising immediately beneath them are much prolonged and sickle-shaped, extending over the wing; these falcated feathers have white shafts

with the outer webs black, beautifully fringed with white, and the inner web black, going off into lighter grey; lower part of the back, rump, and upper tail coverts brown, with the tail velvety black, flanked on each side by a broad fan-like expanded cream-coloured tuft of feathers with black bases; the secondaries are rich dark green on their outer webs, forming the speculum, light brown on their inner webs; primaries light brown; abdomen mottled grey; the flanks, down to the tail, richly and beautifully marked by waves, zigzags, and circular lines of grey and white; under wing coverts white. Legs and feet black brown; beak pitch black.

The female, according to Middendorff's figure, ("Sibirische Reise," vol. ii, pl. 23,) has the head, back, and breast dark brown, with the edges of each feather russet; lesser wing coverts whitish; speculum dark green; wings and tail dark brown; beak and feet black.

Of the young Dr. Schrenck (opus cit) says:—"Of my five young specimens, four are from the Amur and one Kamtschatka. There are four males and one female, in youthful plumage, the males fully fledged, the female with down on its wings. Both sexes are at first sight very similar, but they are easily distinguished on examination. The young female has a great resemblance to the old one, but differs in being darker and unicolorous above, while the under parts, from the chin to the under tail coverts, have the same colour and markings, the under tail feathers being grey brown, bordered only with rust yellow, while in the adult female they are marked with this colour in the middle concentrically. On the upper parts next to the dark colouring of the head there is a broad band,

from the forehead to the neck, which is almost unicolorous brown black, but when seen in light it has a feeble greenish lustre, and near the eyes the feathers have a slight yellowish grey border. The cheeks and auditory orifices are entirely as in the old female, streaked with yellowish grey and black; the throat duller and almost unicolorous brown grey, whilst the streaky markings of the old bird are hardly visible; the shoulders and upper part of the back are likewise duller and unicolorous. The lower part of the back to the rump and the upper tail feathers are almost unicolorous black brown, the first scarcely marked, the latter with rust yellow borders; tail feathers black brown, with scarcely visible whitish borders; the wings are duller than in the old female; upper wing coverts grey brown, and the lesser and middle often marked at the points with blackish borders. The tips of the greater wing coverts, which have a well-formed speculum, are not clear white, but only greyish white; the speculum has a dull greenish lustre; primaries unicolorous black brown, somewhat lighter on the inner webs of the upper parts."

"The advanced but still youthful clothing of the young male has a great resemblance to the female in the same seasonal dress, especially the under parts; the head, throat, lower part of back, rump, upper tail feathers and coverts are precisely the same; while the shoulders, upper parts of back, and wings, are distinct; on the shoulders and lower part of the throat especially are found unicolorous black brown feathers, with rust yellow borders. The feathers on the upper part of the back, which are black brown, are mixed with some having yellow borders, and others with very delicate waved bands or spots. These marks are like

those on the old male, but differ in colour, being blackish grey or dark grey and white in waves; the cross bands in old ones are much more numerous and decided." The wings of the young male differ from those of the female in having a strong green polished speculum, and a clear grey on the upper part of the wing.

The young of *A. falcata*, whether male or female, are distinguished from the old birds by having a shorter and stouter beak, having the basal half somewhat flattened, and from the nostrils keel-shaped, which last mark is lost in the old bird. This difference in the size and form of the beak in young birds, accounts for the discrepancies in some of Dr. Schrenck and Middendorff's specimens. The female's beak is sometimes as long or longer than that of the male.

My figure is taken from a very fine male specimen in breeding plumage, from the Amoor, kindly sent me by Mr. Tristram.

The adult male has also been figured by Brandt, Descript. et Icon. Anim. Rossic, pl. 3; and the adult female by Middendorff, Sibirische Reise, vol. ii, pl. 21, fig. 2.

PALMIPEDES.

Family ANATIDÆ. (Bonaparte.)

Genus ANAS. *(Linnæus.)*

MARBLED DUCK.

Anas marmorata.

Anas marmorata,	TEMMINCK; Man., iv, 1840.
" *angustirostris,*	MENETRIES; Cat., p. 58, No. 205.
Dafila marmorata,	EYTON; Anat., p. 114, No. 4.
Querquedula angustirostris,	BONAPARTE; Birds, 1838.
Canard Marblé,	OF THE FRENCH.
Schmalschnäblige Krikente,	OF THE GERMANS.

Specific Characters.—Beak straight. General plumage light brown, darker on the back, and marbled with white. No speculum on the wings. Length fourteen inches and a half; carpus to tip eight inches; tarsus one inch and a half; middle toe and claw two inches; beak from forehead one inch and four fifths; beak from rictus two inches and one tenth.

THIS Duck was first figured I believe by Mr. Gould, in his "Birds of Europe," part 9, having previously, according to Schlegel, been described by Edward Menetries, in his "Catalogue Raisonné," published at St. Petersburg in 1832, as *Anas angustirostris.* This name, according to modern rules, ought probably to stand, but the straightness of a Duck's beak is, to

MARBLED DUCK.

say the least of it, a very equivocal title to distinction; and I am therefore glad to retain the name given by Temminck, and which most expressively gives the general appearance of the bird.

The Marbled Duck inhabits the south of Europe, the north of Asia, and Africa. In Europe, it has been captured in Sardinia, according to M. Cantraine, which, however, is the only Mediterranean locality in which he found it, and there it was very rare. This does not agree with the account given by Lord Lilford, who says, in his paper on the Ornithology of the Ionian Islands, ("Ibis," vol. ii, p. 353,)—I saw a boy at Butrinto with a mutilated specimen of this rare Duck in his hand, which he had just killed on the lake; he said it was alone when he shot it. I once flushed three Ducks at Phanari which puzzled me very much at the time, but which I have now no doubt belonged to this species; and an officer of the garrison of Corfu described to me a small Duck he had killed near Arta, which I think can have been no other but this. The Marbled Duck is not uncommon in the Island of Sardinia, and very common at Tunis in January and February." Captain Loche mentions its occurrence in the great lakes of Algeria, where we find the word *Marmora* pedantically enlarged into "*Marmaronetta angustirostris*," according to a paper of Prince C. Bonaparte, in the "Comptes Rendus." Lake Halloula is given as its locality, but Mr. Tristram looked for it in vain during his visit to that most interesting and productive piece of water.

According to M. Cantraine it feeds on insects and worms; and Degland says that it breeds in Algeria, that its eggs are white, very lightly tinged with russet, and that the ends are nearly of the same size. Great

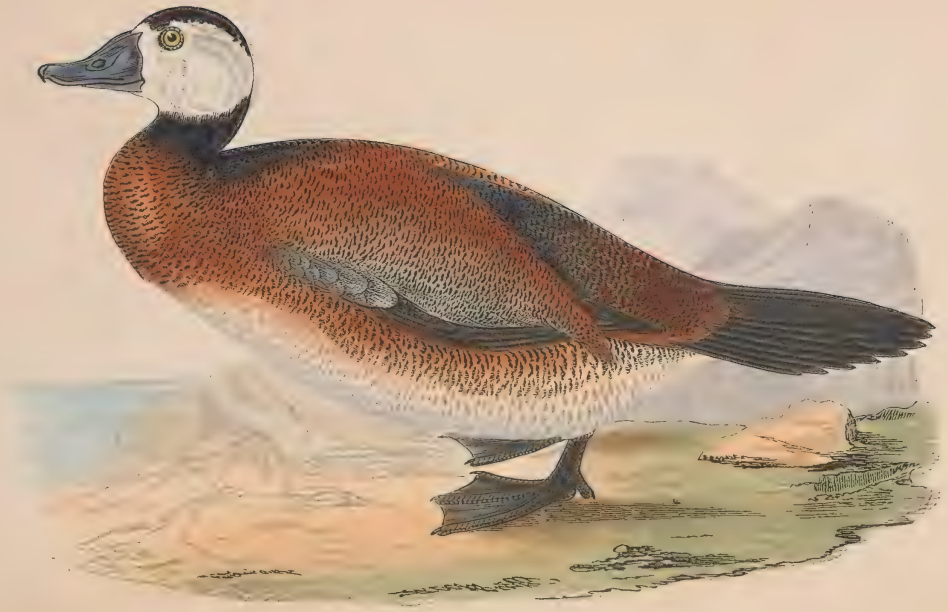
diameter four centimetres and six or seven millemetres, the smaller three centimetres three or four millemetres.

The adult male has the top of the head and nape, scapularies, back, and upper tail coverts dark clay brown, marbled with white, the scapularies being broadly bordered with that colour; the wing coverts the same colour, but only very slightly fringed with white or unicolorous; primaries of a richer brown, the outer web having a bluish tinge, and marked with bluish white near the ends of the outer webs of the first six, contrasting with the dark brown tips of the feathers; secondaries unicolorous clay brown. Throat and cheeks finely-marbled light brown and white; chest and crop, flanks, and under tail coverts barred transversely with brown upon a ground which is lighter than the dirty white of the abdomen; tail above light brown, tipped with white, below dirty white. Beak black brown, the nail darker glossy, and much bent downwards, so as to produce a kind of hook; feet and legs black brown; iris brown.

The female is, according to Temminck, like the male. Its plumage generally brighter; the striæ and brown bands paler, and the white of the abdomen purer.

My figure is taken from a fine specimen sent me by Mr. Tristram, which came from Alexandria.

It has also been figured by Bonaparte, Faun. Ital., fascic 46, fig. 1, (male,) and fig. 2, (young female;) and by Gould, B. of E., pl. 373.



WHITE-HEADED DUCK.

PALMIPEDES.

Family ANATIDÆ. (Bonaparte.)

Genus FULIGULA. *(Stephens.)*

Generic Characters.—Beak of a form and length very variable, more or less elevated at the base and depressed towards the point. Nostrils a short distance from the base. Legs more behind the centre of gravity than in the genus *Anas*, and the tarsi more compressed; toes long, the two outer ones being larger than the tarsus; hind toe with distinct depending membrane. Wings rather short; tail more or less stiff. Trachea dilated and ossified at its bifurcation.

WHITE-HEADED DUCK.

Fuligula mersa.

Fuligula mersa,	DEGLAND; Ornith. Europ., 1849.
Anas mersa,	PALLAS; Voy., 1776. SCHLEGEL.
" *leucocephala,*	SCOPOLI, according to GMELIN. Syst., 1788.
" "	LATHAM. TEMMINCK.
Erismatura leucocephala,	BONAPARTE; 1838.
Undina mersa,	KEYSERLING ET BLASIUS; 1840.
" *leucocephala,*	GOULD.
Fuligule couronné, Canard couronnè, or Canard Nymphe,	OF THE FRENCH.
Europäische Nymphenente,	OF THE GERMANS.
Gobbo ruginosa,	SAVI.

Specific Characters.—Beak very thick; wings very short; tail very long, conic, with the quills very stiff and pointed, forming a series of furrows; no speculum. Length seventeen inches; carpus to tip six inches and a fifth; tarsus one inch and a half; middle toe and claw three inches; beak from forehead two inches; beak from rictus two inches; circumference at swollen base of beak three inches and four fifths.

This singular and interesting Duck is an inhabitant of the eastern parts of Europe and the central and eastern parts of Siberia. It is very common in Russia, the Ural Mountains, Livonia, and Finland, frequenting the marshy lakes of those countries. It is observed, according to Temminck, only during its passage, in Hungary and Austria, but I have an egg sent me by Mr. Wheelwright, which is said to have been taken in the former country. It is very rare in France. One young specimen is recorded by Degland as having been killed in the south of France; another in the swamps near Dieppe, by M. Hardy; and M. Bouteille states that he purchased four specimens in January, 1846, killed in the marshes of Grenoble. It occurs in Sardinia, and Savi states "It is said not to be rare in Hungary. I know that in winter it is frequently met with in Sardinia. Professor Rauzani, in the Decr. of 1808, had two young males which were killed in the Valley of Comacchiesi. It is very rare in Tuscany. Since I have studied birds I have only known of its having been found there three times. In October, 1818, three adult individuals were met with in the ditches of the Madonna dell' Acqua. The following year a young female was brought to me from our market, and last winter I bought there two young specimens, male and female, which were said to have been killed on Lake Maciuccoli. According to Gerini,

in the "Florentine Ornithology," it was once very common in the marshes of Bientina, but is now no longer, or very rarely caught there."

Degland says that it occurs in Greece, but no mention of it is made by Count Mühle or Dr. Lindermayer, in their ornithological catalogues of that country. It is, however, not uncommon on the borders of the Black Sea. Dr. Carte, on the zoology of the Crimea, says,—"Two or three were seen in the harbour of Balaklava, in the month of February, 1855, fishing for small fish, shrimps, etc., diving with great ease, and remaining under water a considerable time. An allied species is found in the salt-water lagoons of Australia and Tasmania." Lord Lilford says it is common, and he believes resident in the Ionian Islands, on Lake Butrinto, and on the lagoons of Nicopolis. It is much more common on the opposite African coast. It occurs, according to Captain Loche, in all the great lakes of Algeria, and he mentions that of Halloula. Mr. Salvin says he found it commonly in the lagoon of El Baheira, and he saw it at Djendeli and Zana, in the Eastern Atlas, ("Ibis," vol. i, p. 364.) Mr. Tristram found it on the Lake of Bou Guizoun, in June, 1856, and at Tuggurt, in Northern Africa, in December of the same year, ("Ibis," vol. ii, p. 82.) He also fell in with it and obtained the nest and eggs at the Lake of Halloula, his visits to which I have before had occasion to refer to with pleasure.

"We found two nests of the White-headed Duck, *(Erismatura mersa,)* among the sedge, containing, the one three, the other eight eggs. These are very large for the size of the bird, almost perfectly elliptical in shape, and a line longer and wider than those of the

Velvet Scoter; of an extremely rough texture, unlike that of any other Duck, more resembling the egg of the Bean Goose, but far more coarsely grained, and of a dull white colour. "The habits and flight of the bird are more like those of a Grebe than a Duck. It often saves itself by diving, and remains under water for a considerable time." Mr. Tristram did not meet with this Duck in Eastern Algeria. Mr. Tristram does not say that the nests he found were floating. Temminck says they float like the nest of a Grebe.

The bird when swimming is submerged in the water, except its head, and its stiff tail acts as an excellent rudder to steer it about. Its legs are placed beyond the centre of gravity, so that it cannot walk. It is, however, an expert diver, as stated by Mr. Tristram, and for this its organization beautifully adapts it.

I am very glad to have the opportunity of figuring one of the eggs taken by Mr. Tristram on Lake Halloula, as well as a male bird from the same locality.

This specimen, killed on the 15th. of April, 1856, and therefore in the breeding plumage, has the top of the head and occiput black, with the forehead, nape, cheeks, and base of under mandible white; neck and throat black; back, scapularies, upper wing coverts, and flanks reddish brown mottled with grey and white; the sides of the chest and upper tail coverts deep red brown; tail black; lesser wing coverts dull brown, edged with minute black and white spots; primaries and secondaries very short, and brown; chest deep red brown, spotted with black; crop and abdomen dirty glossy (Grebe-like) white, covered thickly with black spots, more or less distinct. The short and singularly

inflated beak, the very small nail, and the legs and feet black.

My figure is from a specimen sent me by Mr. Tristram.

It has also been figured by Bechstein, Tasschenb. Deut., vol. ii, p. 444, No. 29; Naumann, Vogel Nachtr., pl. 40, fig. 79, (male and female;) Stor, Degli Uccelli, pl. 577; Savigny, Egypte, pl. 10, f. 2; Gould, pl. 383.

PALMIPEDES.

Family ANATIDÆ. (Bonaparte.)

Genus FULIGULA. *(Stephens.)*

ARCTIC GARROT.

Fuligula barrowii.

Fuligula barrowii,	DEGLAND; Orn. Emrop., vol. ii, p. 446, 1849.
Clangula barrowii,	RICHARDSON; Faun. Bor. Amer., p. 456, No. 216.
" "	BONAPARTE; 1838.
" *islandica,*	Revue Critique, 1850.
" *scapularis,*	BREHM; Vog. Deut., p. 952, Sp. 5.
Anas barrowii,	GMELIN. TEMMINCK; Manual, 4th. Part, p. 551, 1840.
" *islandica,*	SCHINZ; Europ. Faun., 1840.
" *clangula,*	FABER; Prod. Island., p. 71, Sp. 5.
Platypus barrowii,	REINHARDT; Faun. Greenl., p. 24, Sp. S. fig. 3.
Glaucion islandicum,	KEYSERLING ET BLASIUS; Die Wirbelt., 1840.
Garrot Arctique,	OF THE FRENCH.
Arctische Schellente,	OF THE GERMANS.
Rocky Mountain Garrot,	RICHARDSON.
Barrow's Duck,	GOULD.

Specific Characters.—Head and upper part of the neck pansy purple, with a large white crescent before each eye; the white

ARCTIC GARROT.

1. ARCTIC GARROT.

2. WHITE-HEADED DUCK.

speculum separated from the band on the coverts by a black stripe, (male.) The female is like the Golden Eye, but the beak, as in the male also is shorter, and narrower towards the point. Length twenty-two inches and a half; wings nine inches and a half; beak one inch and one third; tarsus one inch and seven lines; middle and outer toe each two inches and a half.—NUTTALL.

THIS diving Duck is closely allied to, and probably a race of the Golden Eye, and was figured and described in the "Faun. Bor. Amer." of Richardson and Swainson.

It is an inhabitant of the Arctic regions of Europe and America, being especially located in Iceland, on the borders of Lake Maytavan. In America it appears to be exclusively confined to the Rocky Mountains, for which reason it was called by Richardson the Rocky Mountain Garrot.

Very little has been recorded of this bird since the appearance of Richardson and Swainson's work. It nests on the rocks, among the herbage, and lays ten or twelve eggs, which are of a clear green colour, and many of which have found their way into British collections for the Golden Eye, from which indeed it differs very little. Great diameter two inches and two fifths, smaller one inch and four fifths.

Temminck says that the old birds migrate from Iceland before the females, and the young of the year leave a considerable time after the old birds.

In its habits the Arctic Garrot does not differ from the Golden Eye.

The adult male has the head and two inches of the neck bright pansy purple, with a greenish reflection on the ears. Forehead and chin brownish black. Dorsal plumage, wings, and broad tips of the long flank feathers mostly velvet black. The crescent-shaped

patch from the rictus to the sides of the forehead, lower part of the neck, shoulders, tips of the outer scapulars, lower row of lesser coverts, tips of the greater coverts, six secondaries, and the under plumage white; space round the thighs, tail, and its lateral under coverts brocolli brown. Bill blackish; legs orange; webs black. The feathers of the forehead terminate on the bill in a semicircular outline. The plumage of the occiput and nape longer than in the common Golden Eye, and forming a more decided crest; wings two inches and a half shorter than the tail.

In the female the head and adjoining part of the neck are umber brown, and without any white mark; dorsal plumage pitch black; its anterior parts, particularly the shoulders and the base of the neck all round, edged with ash grey; a white collar round the middle of the neck. Flanks clove brown, edged with white. Intermediate coverts blotched with white and black; greater coverts white tipped with black; secondaries as in the male. Both mandibles orange at the point, their tips and posterior points black. Feet as in the male.—Nuttall.

My figure is taken from Richardson and Swainson, Faun. Bor. Amer., pl. 70. The egg is one brought by Mr. Procter, of Durham, from Iceland.

The bird has also been figured by Gould, pl. 380.

DALMATIAN PELICAN.

PALMIPEDES.

Family PELECANIDÆ. (Bonaparte.)

Genus PELECANUS. *(Linnæus.)*

Generic Characters.—Beak long, thick, straight, and much depressed; upper mandible flattened, terminated by a strong nail or hook; inferior mandible formed by two bony branches, depressed, flexible, united at the tip; from these two branches depends a large fold of skin in the form of a pouch. Face and throat naked; nostrils basal, opening longitudinally; legs strong, short; three toes in front and one behind, the latter articulated internally, but on the same plane as the others, all united by a membrane; claw of middle toe without denticulations. Wings medium size; the first primary shorter than the second, which is the longest; greater wing coverts and secondary quills, nearest the body, as long as the primaries.

DALMATIAN PELICAN.

Pelecanus crispus.

Pelecanus crispus,	BRUCH; Isis, 1832.
" *onocratulus, var. orientalis,*	LINNÆUS.
Pelecanus onocratulus,	PALLAS.
Pélécan frisé,	OF THE FRENCH.
Riesen-Pelikan,	OF THE GERMANS.

Specific Characters.—A small reddish naked space round the eyes, which space is narrow at the base of the beak, where the frontal feathers form a double festoon. Tarsi short; feet blackish. Plumage generally argentine white. Length six feet; from carpal joint to tip of wing twenty-five inches; beak from forehead

fourteen inches and three tenths; beak from rictus fifteen inches and three tenths; naked space about the eyes two inches by one inch and three tenths; tarsus three inches and a half; middle toe and claw five inches and a half.

The Pelicans form a distinct and well-marked genus, with which, thanks to the spirited proprietors of the Zoological Gardens, most people are very familiar. The singular character of the birds in the gardens—their awkward gait, their voracity, the huge bag suspended beneath the lower mandible, which they fill with the fish most nimbly by a kind of side shovelling or scooping with their long flat beak, at once arrest the attention and excite the interest of the observer. But look at the Pelican in his own wild haunts—look at him dashing like a lump of lead into the sea after his prey, or waiting about eddies and waterfalls with the same object—and then watch them in immense troops, flying in the form of an oblique line or semicircle, and he appears a very different bird to those which we see in confinement.

Pelicans live upon rivers, lakes, or on the sea-coast. They usually fly low, but sometimes ascend to a great height. They are good swimmers, and can perch upon trees, but they do not prefer this mode of resting, generally taking to the water. They feed principally in the morning and evening, and continue catching fish until their huge æsophageal pouches are filled, when they retire to some lone and insulated retreat to digest their enormous meals, as though aware of their danger when gorged.

This pouch, which holds in some instances as much as a dozen quarts of water, prevents the proper articulation of their voice, which is, consequently, as Nuttall has remarked, "a mere hoarse, hollow, and indistinct

sound, sometimes bordering on a grunt." Latham says that they will sometimes unite together in the form of a circle, and beat the waters with their wings, so as to frighten the fish, which consequently become an easy prey. They breed on rocks near the water, generally in places difficult to get at. They lay from two to four eggs. They are very much attached to their young; hence the old legend that they will feed them with their own blood, which is however a mere fable, arising from the fact that they feed them by disgorging the contents of their pouches. Equally fabulous is the story of their bringing water in their pouches into the desert, to sustain the camel in his thirsty journey. The Egyptians, however, call the Pelican the Camel of the River, and the Persians the Water Carrier, which has evidently arisen from their performing this office for their young.

The Pelican is said to attain to a great age. Gesner, on the authority of Cullman, gives an instance of one which lived eighty years. Its flesh is bad both to taste and smell.

I have selected the rarer of the two European species to notice first, as I have, by the kindness of Mr. Tristram, a fine specimen before me.

The Dalmatian Pelican, equally with the White Pelican, inhabits the east of Europe and north of Africa, but it is also common in Hungary, Dalmatia, Moldavia, the Crimea, Greece, and the Ionian Islands. It is also found in Algeria, according to Captain Loche and Mr. Tristram; and it ranges even to China, as noted in the "Ibis," vol. ii, by Mr. Swinhoe.

Of its occurrence in Greece we have the testimony of several writers. Count Mühle, "Orn. Griech.," p. 132, says,—"It is very plentiful in Greece the whole

year through, and on many lakes and swamps, such as Zigeri, Kopai, and Paralynni, are broad colonies of them. They are also very plentiful on the lakes of Missolonghi and Thermopylæ. In places incredibly difficult to reach, where floating islands are found, they place their nests very thickly together, supported among the reeds and rushes, and generally soaked with wet. The whole neighbourhood of these congregated nests is covered with their dull white dung and a multitude of foul fish which they have dropped about, and which makes the spot horribly offensive."

"My friend, Lieut. Freyberg, assured me that after much search in these breeding-places, he had found in a nest—if we may call the hole they use by such a name—a full-grown young one, and another only covered with down, which can only be explained by the supposition that two females had each laid an egg in the same nest.

"The yellow grey young birds have a very unsightly appearance, and these never-satisfied screamers, with their shrill shrieking voice and the unformed head hanging on their crop, make an unsightly picture.

"Near the nest the old ones are not shy, and if you can get to their ground you may kill as many as you like. They fly gracefully and lightly, and describe as many circles as the Gulls. I have never seen them fishing together, but they seem to like the company of the Cormorant. When they have stuffed themselves with food, they may be seen sitting and resting on the low rocks along the shores of the sea."

Lord Lilford says it is common in the Ionian Islands throughout the year, on the coasts of Epirus, and that it breeds at Suttanieh, on the Gulf of Arta.—("Ibis," ii, p. 355.) Mr. W. H. Simpson also met with

it in Western Greece, and gives the following graphic description:—"Time was, and not so long ago, when *Pelecanus crispus* lived in hundreds all the year round, from the rocky promontory of Kourtzolari, hard by the mouth of the Acheloüs, on the western extremity of the lagoon, to the islands of Ætolieo, up its northern arms, and on the east to the great mud flats which mark the limits of the present delta of the Phidaris. Now-a-days a solitary individual may be seen fishing here and there throughout the lagoon, but the small remnant of this once mighty host have made their last stand upon the islands which divide the Gulf of Procopanisto from the Gulf of Ætolieo. Here, towards the end of February last, the community of Pelicans constructed a group of seven nests,—a sad falling off from 1838, when thirty-five nests (the remains of which had not then disappeared) were grouped in contiguous proximity upon a neighbouring islet. It needs not the nose of a pointer to discover the locality, even if the large white birds themselves were not a sufficient guide. As we approached the spot in a boat the Pelicans left their nests, and, taking to the water, sailed away like a fleet of stately ships, leaving their newly built establishment in possession of the invader. The boat grounded in two or three feet of mud, and when the party had floundered through this, the seven nests were discovered to be empty. A fisherman had plundered them that morning, taking from each nest one egg, all of which we of course recovered. The nests were constructed in a great measure of the old reed palings used by the natives for enclosing the fish, though with these were mixed such pieces of the vegetation of the islet as were suitable for the purpose. The seven nests were contiguous, and disposed in the shape of an irregular cross, the navel of the cross,

which was the tallest nest, being about thirty inches high, the two next in line on each side being about two feet high, the two nests forming each arm of the cross a few inches lower, and the two extremes at either end being about fourteen inches from the ground. These latter, it is presumed, were intended for the junior partners of the firm in the same way that the great bear of the nursery tales has a big seat, his wife a middling seat, and the little bears a small seat. The eggs are chalky, like those of the *Pelecanidæ* generally, very rough in texture, and some of them much streaked with blood."—"Ibis," vol. ii., p. 395.

By the kindness of Mr. Tristram I am enabled to figure one of the eggs mentioned in the above interesting account.

Dr. Baldamus in "Naumannia" for 1852, relates the following capture of this bird:—"On my return from Orsova to Parosova I saw in the steamboat a Pelican fly past near the water, and it went on six hundred paces ahead of us. The captain gave me permission to shoot from the steamer, and I killed it within thirty paces, as it was soaring above the bowsprit. This was in the current of Klissura, and the bird must either have come over the high rocks from the Valley of the Danube or from Wallachia. This bird nests in the swamps between the Danube and the Theiss, and I received two young ones and the old female, which lived some weeks on live and dead fish."

In the same journal for 1853, p. 23, Dr. J. F. Naumann says:—"On the Upper Sarpa Ponds (colony of Sarepta) is a most interesting breeding place of this bird. I looked for them unfortunately too early, but the construction of the nest could be well observed. It was placed very deep in the rushes of the pond. After half an hour's trial we succeeded in making a

passage through mighty rush thickets, where the Swans and Ducks were swimming about. The nests were placed on the narrow banks, close to one another, and they appeared as though they were swimming together among the roots of the old rushes and reed stems, and they were placed so thickly that they did not sink when stood upon or walked over. The nest was very narrow for the size of the bird."

The adult male and female have on the head and neck an abundant coiffure of long white feathers, slightly twisted and silky; all the feathers of the head and neck are narrow filaments more or less contorted; those of the crop are straight, awl-shaped, shining, and of a yellowish tinge; the abdomen greyish white; all the upper parts, including the wings, are covered with long white feathers, of which the shafts are blackish; tail of silvery white, with black shafts; primaries black, with their bases silvery white, running into grey on the inner web,—the tips are also greyish; the secondaries white, with their extremities silvery grey. The eye is surrounded by a yellowish red naked patch, of which the tint becomes bluish near the beak; superior mandible grey, spotted with blue and red. The guttural pouch orange, more or less varied with yellowish grey, and on each side a yellowish grey spot. Legs and feet ash-colour; iris clear yellow.

The young have no crest; the pouch is greyish, more or less tinged with yellowish; their plumage is grey, mixed with bright brown.—(Temminck.)

My figures of the bird and its egg are from specimens kindly sent me by Mr. Tristram.

The bird has also been figured by Brandt, Animal. Rossic. Nov. Icon., fas. 1, pl. 6; Gould, B. of E., pl. 406; Naumann, Vogel. Deutsch., pl. 283.

PALMIPEDES.

Family PELECANIDÆ. (Bonaparte.)

Genus PELECANUS. *(Linnæus.)*

WHITE PELICAN.

Pelecanus onocratulus.

Pelecanus onocratulus,	LINNÆUS.
" *roseus,*	EVERSMAN.
" *minor,*	RÜPPELL.
Pélécan blanc,	OF THE FRENCH.
Gemeiner pelikan,	OF THE GERMANS.
Pellicano,	SAVI.

Specific Characters.—The eye is placed in a large naked patch, which is broad at the base of the beak, where the feathers of the forehead form one point; tarsi long; legs vivid. Plumage rose colour. Length from five to six feet, and sometimes longer.

THE White or Common Pelican, or The Pelican of authors, inhabits in Europe the same localities as those mentioned for the Dalmatian Pelican. It has occurred also, but accidentally, in France, Italy, and Sicily. A young subject was shot by M. Hollandre on the 4th. of October, 1838, in the pond of Fourligny, in the Department of Moselle, and is recorded in his "Faune de la Moselle," p. 191. Degland records the capture

WHITE PELICAN.

of one in June, 1849, in the neighbourhood of Guête, and three others near Libourne, in the Department of the Gironde, which he supposes were flying to the grounds in which they ordinarily lived, and which were then the theatre of war. Mr. W. H. Simpson ("Ibis," vol. iii, p. 366,) describes what must have been a magnificent sight, namely, a flock of Pelicans, which he supposed were of this species, numbering *several thousands*, flying northwards in the Dobrudscha. Lord Lilford ("Ibis," vol. ii, p. 355,) says that the White Pelicans pass in enormous numbers over Corfu southwards in November, and that a few remain about the coasts of Epirus throughout the winter.

Count Mühle says,—"This Pelican is also very rare in Greece. I believe that it comes there to breed, but is only seen singly, now and then in winter. Among all my specimens of Pelicans I have only one of this species, which was killed in April in the lake of Missolonghi. It was a female, and about to lay, as a mature egg was taken out of its body. Dr. Lindermayer says that it is much rarer in Greece than *P. crispus*, only a solitary one being seen in the large lakes now and then. He does not speak of its breeding there with certainty. It is found, according to Captain Loche, in Algeria, but only accidentally. In Egypt, the Rev. E. C. Taylor says, "Ibis," vol. i, p. 54, "This magnificent bird is tolerably numerous, and generally distributed. It is usually to be seen standing on sand-banks in the bed of the river, and is a characteristic feature of Nile scenery." Dr. G. Hartlaub includes it among the birds of West Africa, and gives Senegambia, on the authority of Lichtenstein, and Mozambique, on the authority of M. Verreaux, as localities, ("Ornithologie Westafricas," p. 259.)

At one time almost all Pelicans fell under Brisson's name of *onocratulus*, and Nuttall has given a long description of this bird as an inhabitant of America. It does not, however, I believe, occur there, the two American species being *P. trachyrhyncus* of Latham, and the *P. fuscus*, or Brown Pelican, of Linnæus.

The White Pelican is very similar in its breeding habits to its congener and very near ally, *P. crispus*. It nests among water plants, generally on the ground, or among the thick herbage, and lays two or three large white eggs, the surface of which is rough and calcareous.

The White Pelicans live on the coasts of the great lakes, and banks of rivers, and coasts of the sea, in small flocks. They live principally on fish. They swim and fly with great agility. They migrate in immense flocks on the approach of winter.

The male in breeding plumage is white, tinged with rose, and with a long occipital crest; the crop yellowish, and the primaries black; beak bluish grey in the middle and above and below on its posterior half, the rest yellow, becoming whiter near the tip, with the lateral bands, borders of the mandibles, and the nail, red; the naked part on the face flesh-coloured, with the front swollen, forming an oval brick red protuberance: the pouch yellow ochre, veined with bluish red; lower part of thighs, tarsi, and toes rose, shaded anteriorly and in the articulations with orange; iris dark sealing-wax red, with whitish rays, and the conjunction projecting, and of an orange red.

In winter there is a frontal protuberance; the face whitish; iris brown; the conjunction sealing-wax red; the guttural pouch bright yellow; and the legs livid red.

The female resembles the male, but is smaller, and the beak shorter.

Young of the year have the head, neck, and upper parts, whitish ash, darker grey on the back, on the scapularies, and wing coverts, with the borders a brighter tint; primaries, beak, and naked parts of the cheeks, and throat, livid; legs ashy brown; iris brown.—(Degland.)

My figure is from a specimen in the Zoological Gardens.

The egg was sent me by Mr. Tristram. It is from the Moravian settlement on the Wolga.

The bird has also been figured by Buffon, pl. enl. 87, (adult,) 965, (young;) Roux, Orn. Prov., pl. 342, (young;) Edwards, pl. 92; Stor, Degl. Ucc., pl. 499 and 500; Naumann, pl. 282; Gould, B. of E., pl. 405.

PALMIPEDES.

Family PELECANIDÆ. (Bonaparte.)

Genus CARBO. *(Meyer and Wolff.)*

Generic Characters.—Bill moderate, or long, straight, and compressed, culmen rounded; upper mandible much curved near the point, hooked; inferior mandible compressed; the base connected with a membrane which extends to the throat. Face and throat naked; nostrils basal, linear, hid. Legs strong, short, much drawn into the abdomen; three toes in front and one behind, the hind toe articulated to the inner surface of the tarsus, all united by a membrane; claw of the middle toe serrated on the inner edge. Wings of moderate length; the first feather slightly shorter than the second, which is the longest.

LITTLE CORMORANT.

Carbo pygmæus.

Carbo pygmæus,	TEMMINCK; Man., 1820.
Pelecanus pygmæus,	PALLAS.
Hydrocorax pygmæus,	VIEILLOT.
Phalacrocorax pygmæus,	BONAPARTE.
Cormoranus pygmæus,	DUBOIS; Ois. de la Belgique, part 111, pl. 230.
Cormoran pygmée,	OF THE FRENCH.
Zwergscharbe,	OF THE GERMANS.
Dwarf Shag,	LATHAM.

LITTLE CORMORANT.

Specific Characters.—Beak shorter than the head, and slender; tail long, the feathers straight and stiff. Length twenty inches and a half; from carpal joint to tip seven inches and a half; beak from forehead one inch and three tenths; beak from rictus two inches; tarsus one inch; middle toe and claw two inches and a half; tail six inches, and, in the specimen figured only ten quills.

The Little Cormorant is an inhabitant of the eastern parts of Europe and Asia. It is common in Hungary and Dalmatia, and is found along the shores of the Black and Caspian Seas. It occurs also in Greece, and occasionally wanders into Germany, Belgium, France, and Italy, but not, as stated by M. Dubois, by mistake, into the British Isles. It is very abundant, according to Lord Lilford, in Epirus, in the Ionian Isles, where it does not "appear to have any particular preference for salt water to fresh, as it is often to be found in ditches and flooded meadows far from the sea."—("Ibis," vol. ii, p. 355.) Lord Lilford also saw it in Albania. In Italy it clearly has come under the notice of Savi, but at the time he wrote he seemed to connect it with the young of the Shag. In Greece Count Mühle says that although it is taken on all the great lakes, it is far less plentiful than *Carbo cormoranus*, (The Cormorant.)

"It prefers the large lakes and swamps to the sea, which it only frequents in winter. It probably breeds there, though I cannot say anything with precision about its nidification, for it is taken throughout the whole summer. Naumann's remark that it climbs up the reeds is very correct, and in this it resembles *Ardea minuta*. It is very shy, and has a great tenacity of life, so that many when hard hit are lost by the sportsman, and consequently it is very difficult to get perfect specimens for preservation."

Dr. Lindermayer says that it breeds along the Island of Euboa, in the inland lakes, and the surrounding country.

"The Little Cormorant," says M. Dubois, "frequents the lakes in the interior of the continent, as well as the sea; but it loves, above all things, extensive marshes which are full of reeds and other aquatic plants, and cut into channels of deep water, full of fish, where they can constantly seek their food, for they are very voracious, and wage a constant war against the finny tribe. When they wish to rest they place themselves on the trunk of a tree, or post surrounded with water, where they remain for hours without moving.

"Their immobility seems to be a source of the greatest pleasure to them in fine weather. Plunged into a half sleepy condition, it is at such times easy to cover them with the gun; but the sportsman is often deceived when he thinks by their sudden fall into the water that they are mortally wounded, as they often rise to the surface again far beyond his reach. They swim with an inconceivable dexterity, and they can hardly be seen when they are in the water, as they only shew a small part of the head and the top of the back.

"They are very sociable, above all to their congeners; they are seen united in large numbers in the places where they breed, and they live there peaceably, even with birds of another species. To construct their nest they generally choose a site which is dangerous to approach. They select the trunk of a willow which is surrounded by mud and slime, which forbids all approach even in a boat. Two or three nests are sometimes found on the same stump, composed of small branches and reeds, which they build up to a rather

1. LITTLE CORMORANT.

2. DALMATIAN PELICAN. 3. WHITE PELICAN.

considerable height; and the white dung which they constantly deposit gives the nest the appearance of having been coarsely plastered with lime. They lay towards the end of May five or six eggs, rarely more. The male and female alternately incubate."

The Little Cormorant is not the smallest of its genus, and therefore, as Temminck has observed, the name *Pygmæus* is inappropriate. It is, however, much smaller than the Shag, *S. graculus*, and differs from it strongly in the size of the beak, and length of the tail and dorsal plumage. It is altogether a smaller made bird, and no mistake can be made between the two when compared together. It is more than probable that the young of the Shag has been taken for it, and hence may have arisen the statement of its having been captured in Great Britain.

This bird differs in plumage according to age and season more than sex. The male and female have all the plumage of a lustrous greenish black; the border which surrounds the feathers of the back and wings of a brilliant black, which seems highly polished; very fine white streaks appear on the neck, head, and thighs: these are the shafts, and are only feathered at their end, so that they form upon all the indicated parts very small whitish dots. These partially barbed feathers are only seen during the period of reproduction; they disappear before the autumnal moult. The occipital plumes are elongated into a crest, like the Cormorant or Shag. Primaries and tail feathers of a dark greenish black; beak, naked parts of the eyelids, and throat black; feet blackish grey.

In winter there is no crest or white feathers about the head, neck, and thighs, but there are some white points about the eyebrows.

The young of the year have the head, nape, and back of the neck blackish grey, darker inferiorly; centre of the back and scapularies greenish black, while the sides of the back and the wing coverts are light grey, each feather broadly tipped with black, and finely edged with white; upper tail coverts glossy black; primaries, secondaries, and tail greenish black; the naked parts in front of the eyes and on the throat yellow; the rest of the throat and the abdomen white; front of the neck mottled grey; flanks and under tail and wing coverts black; beak yellow, with zigzag transverse brown markings; feet brown.

The young (light coloured) is from a female specimen sent me by Mr. Tristram. The egg is also from the same gentleman. The darker bird is the adult assuming the spring dress, from Gould.

The bird has also been figured by Savigny, in his work on the Birds of Egypt, pl. 8, fig. 1; Gould, pl. 409; Dubois, Oiseaux de la Belgique, part 111, young and adult.

In the "Annales des Sciences Naturelles" for August, 1806, p. 460, M. Payraudeau described what he called a new species of this genus, under the name of *Phalacrocorax Desmarestii*. Many writers have considered this a distinct species, under the name of the Mediterranean Shag, as it seems to be located only in the northern part of that sea. Temminck, however, in the fourth volume of his "Manuel," says that he could not find a single constant variation from *Carbo cristatus* (*C. graculus* of authors,) to our Common Shag. The discussion, has been carried on down to these times, and the leaning appears to be now, according to Gloger

and Homeyer, towards making it a distinct species. In the present uncertain, and I may say unsatisfactory way of determining species, it would, I think, be premature to call this bird anything more than a local variety of the Common Shag. This is also the opinion expressed to me in a private letter by M. De Selys-Longchamps. It is made a variety also by Blasius, in his "Verzeichniss der Vögel Europa's," published in 1861.

With this number the list of "Birds of Europe not observed in the British Isles" terminates. Since the commencement of the work, however, many species have been accidentally found in Europe which were not then in the catalogues. Blasius, in his list, published in 1861, mentions no less than thirty not figured in this work which have been so observed. Many of these are American species, and few of them have any real claim to be included in the European ornis. Most of them, however, have been noticed in the text; but I propose to publish, in the form of an Appendix, three more numbers to complete the volume, and to select those subjects for illustration which either have a prior claim, or of which authentic skins are available.

LEVANT SPARROW-HAWK.

APPENDIX.

RAPACES.

Family FALCONIDÆ.

Genus Falco. *(Linnæus.)*

Sub-genus Micronisus. *(Gray.)*

Sub-generic Characters.—Beak short, compressed; festoon on margin of upper mandible not very prominent. Tarsus shorter than in *Accipiter*, stout, with prominent scuta in front, and the reticulated scales on the sides distinct; inner toe about equal to first joint of the middle and whole length of the hind toe.

LEVANT SPARROW-HAWK.

Falco gurneyi, Mihi. Nov. Sp.

Specific Characters.—Plumage above in the male dark grey, approaching to black; below greyish white, thickly barred transversely with rusty red. The female lighter above, and the cross bands reddish brown, and more widely separated from each other. Length of male fourteen inches and a half; from carpus to tip

eight inches and a half; tarsus one inch and four fifths; tail seven inches; middle toe one inch and two fifths; beak from forehead along curve to tip ten lines. Female, length, fourteen inches and a half; carpus to tip nine inches and a half; tarsus two inches; tail seven inches; beak eleven lines.

Mr. J. H. Gurney, with his usual kindness and liberality, sent me skins marked *Micronisus sphenurus*, Rüp., as he suspected that this bird might have been mistaken for *M. badius*, Gm., and so have led to the introduction of the latter into the European lists. Upon comparing the skins of Mr. Gurney with the plate and description of *Accipiter sphenurus*, in Rüppell's "Systematische Uebersicht der Vogel Nord Ost Africas," it became evident that they did not refer to that species, as I will shew presently. Mr. Gurney had himself neglected to compare the skins with Rüppell's description, but fully admitted that they could not be the same, and expressed his opinion that the species was undescribed. Upon inquiry I fully believe the correctness of this suggestion.

The skins sent to me by Mr. Gurney are four in number,—male and female adult, and male and female young. From *Micronisus badius*, *M. brachydactylus*, and *M. polyzonoides*, they are at once distinguished by their greater size and the more marked sexual differences, which differences are rendered quite positive when examined more closely. I will first give the measurements of the four skins of the Levant Sparrow-Hawk compared with the above-mentioned three, as well as of *Accipiter nisus*, to which form they approach more closely than the others, and also of *Accipiter sphenurus* from Rüppell's work.

MEASUREMENT IN INCHES.

NAME AND MARKS.	Length.	Carpus to tip of Wing.	Tarsus.	Tail.	Middle Toe.	REMARKS.
Levant Sparrow-Hawk.						
1. "No. 3, Asia, male adult, Lauretta, Beyrout."	$14\frac{1}{5}$	$8\frac{1}{2}$	$1\frac{4}{5}$	7	$1\frac{2}{5}$	
2. "Syria, female adult, Verreaux, 40939."	$14\frac{1}{2}$	$9\frac{5}{10}$	2	7	$1\frac{2}{5}$	This female, it will be observed, is shorter than the male, though otherwise larger. This depends entirely upon the mode in which the skin has been prepared.
3. "No. 8, young female, Lauretta, Beyrout."	$15\frac{1}{2}$	9	$1\frac{7}{10}$	7	$1\frac{2}{5}$	
4. "Male young, Lauretta, Beyrout."	$13\frac{3}{10}$	$8\frac{3}{10}$	$1\frac{3}{10}$	$6\frac{1}{2}$	$1\frac{1}{5}$	
Accipiter sphenurus, Rüppell's description.	$11\frac{5}{6}$	$6\frac{2}{3}$	$1\frac{7}{12}$	$5\frac{7}{12}$		
A. sphenurus, male adult, from Rüppell's figure.	$10\frac{3}{4}$	$6\frac{3}{4}$	$1\frac{1}{2}$	$4\frac{3}{4}$		
A. nisus, male adult, my own.	12	$7\frac{1}{2}$	2	$6\frac{1}{2}$	$1\frac{1}{2}$	
" young female, my own.	$15\frac{1}{2}$	$9\frac{1}{2}$	$2\frac{1}{2}$	$8\frac{1}{2}$	$1\frac{1}{2}$	
M. badius, (from Mr. Gurney.)						
1. "Gould, India, male." Adult.	$11\frac{3}{10}$	$7\frac{3}{10}$	2	6	$1\frac{1}{5}$	
2. "Female, India Puzzudaki, Paris." Adult.	$13\frac{2}{5}$	8	2	7	$1\frac{1}{5}$	
M. brachydactylus, from Mr. Gurney.						
1. "Female, 3326 (3937) Verreaux, adult female."	12	8	$1\frac{7}{10}$	6		
2. "44423, male young."	12	8	$1\frac{8}{10}$	6		
M. polyzonoides.						
1. From Mr. Gurney. "Male, Elephant's Vley., Damara Land." Adult.	10	$6\frac{1}{2}$	$1\frac{4}{5}$	5		
2. "Female, River Obovunga, Damara." Adult.	11	$7\frac{1}{2}$	$1\frac{7}{10}$	6		

By glancing over these figures it will be observed that the Levant Sparrow-Hawk is in some respects quite as large, if not larger than our own Sparrow-Hawk, but that in length of tarsus and middle toe it is constantly smaller; and this constitutes the great difference between *A. nisus* and that series of African and Asiatic species of which the subject of the present notice is the largest bird. But the measurements, while valuable specific marks, will not alone constitute species. There is, however, a marked difference between the Levant Sparrow-Hawk and any of those mentioned in the above table.

In addition then to the measurements, the male adult Levant Sparrow-Hawk differs from that of *A. nisus*. 1.—In the darker upper plumage. 2.—In the closer barring of the under plumage. 3.—In the under wing coverts being lighter rufous, and less barred, and by the deep black *unicolorous* primaries beneath, those of *A. nisus* being barred to the end. 4.—By the two first under tail feathers being unicolorous grey, while those of *nisus* are strongly barred. 5.—By the primaries being black brown and unicolorous above, while those of *nisus* are lighter, and distinctly barred. 6.—The cheeks of the Levant Sparrow-Hawk are slight grey, while those of *nisus* are rufous.

From the female of *F. gurneyi* that of *A. nisus* differs principally in the general character of the under plumage, which is rufous brown and white, not black and white; the bars on the chest and body are broader, and on the thighs they become almost as rufous as the bars on the male.

From the young of *F. gurneyi* those of *A. nisus* differ most markedly in the deep light brown borders of the primaries and upper tail feathers, which are

LEVANT SPARROW-HAWK.

Young Male and Female.

absent in *A. nisus*, while in the under plumage the large oblong longitudinal brown spots, and the russet bars on the thighs and under tail coverts at once proclaim their distinctive characters.

It is hardly necessary to say anything about the distinction of this bird from *M. badius*, *brachydactylus*, *sphenurus*, or *polyzonoides*, as it is altogether larger and different; and I shall point out some of the distinctions between these birds in the next notice when treating of *M. badius*.

The claim of *F. gurneyi* to a place in the European avi-fauna rests at present on a single immature specimen received by Mr. Gurney, from Athens, in the neighbourhood of which it was killed; but its similarity to *A. nisus* has no doubt been the reason of its having hitherto been unobserved.

My figures are the adult male and female, and the young male and female kindly sent me by Mr. Gurney, and drawn to a scale.

The adult male has the upper plumage dark slaty brown, with some white spots on the nape and upper tail coverts. Primaries nearly black, and barred with lighter black on the basal half beneath. Below the general tint is rufous, lighter on the crop; the chin and sides of the head are light slate-colour; the rest of the body, thighs, and under wing coverts barred with ferruginous and silvery grey; under tail coverts white. Tail above dark slaty brown, below lighter; the two central feathers, both above and below, being unicolorous; the others silvery grey, broadly barred through the feathers with black. Beak black; tarsi and toes yellow; claws black.

The female has the upper plumage lighter than that of the male, and the upper tail feathers have traces

of black bands, while all the under ones are barred through. Primaries nearly black, barred on their inner webs with white the whole length of the feather. Chin and sides of the head grey, with light brown bars and spots. The rest of the body, under wing coverts, and thighs barred with hair brown and silvery grey; under tail coverts white, slightly barred with brown. Beak black; tarsi and toes yellow.

Young birds of the year have the head prettily striped longitudinally with rich brown of two shades, and white. The upper plumage rich dark brown; the edges of the primaries, wing and upper tail coverts, bordered with fawn-colour. The chin is white with a few longitudinal dark streaks; the crop and chest broadly marked with brown and white longitudinal spots, which assume a crescentic shape and lighter colour on the abdomen, thighs, and under tail coverts; under wing coverts above fawn-colour, below cream-colour, barred with grey and brown on all the feathers, less distinct on the two above and below; beak horn-colour; tarsi and feet yellow.

I have much pleasure in designating this bird *Falco gurneyi*, in honour of J. H. Gurney, Esq., M.P., of Catton Hall, Norwich, a gentleman who has done much to increase our knowledge of raptorial birds. The name of "Levant Sparrow-Hawk" is a suggestion of Mr. Gurney.

1/3

CALCUTTA SPARROW-HAWK.

Adult Male and Female.

RAPACES.

Family FALCONIDÆ.

Sub-genus MICRONISUS.

CALCUTTA SPARROW-HAWK.

Falco badius.

Micronisus badius,	HODGSON. BLYTH. BONAPARTE.
Falco badius,	GMELIN.
" *dussumierii,*	TEMMINCK; Nec Jerdon vel Sykes.
Accipiter badius,	GRAY.
" *scutarius,*	HODGSON.
" *fringillaroides,*	HODGSON.
Brown's Hawk,	
Calcutta Sparrow-Hawk,	
and Chippuck Falcon,	LATHAM.
Shikra (female,) Chippuck (male,)	OF HINDOSTAN.
Kathia (female,) Tunna, (male,)	OF NEPAL.

Specific Characters.—Upper plumage dark reddish brown to pale ash grey, according to age; below grey white, thickly barred transversely in both sexes with ferruginous. Length of male eleven inches and three quarters; carpus to tip seven inches and a fifth; tarsus two inches. Length of female thirteen inches and two fifths; carpus to tip eight inches; tarsus two inches in the dry skin.

This bird has been introduced into the European fauna by Professor Blasius, not as an accidental visitor, but as a constant inhabitant, ("Verzeichniss der Vögel Europa's.") Not being able to find any record of its occurrence in Europe, and Mr. Gurney, with his great knowledge of this class of birds, being unable to refer me to any instance—except in one doubtful case—of its capture on the continent, I wrote to Professor Blasius, and asked him to refer me to his authorities. Not having received any answer to my letter—which I am far from attributing to an act of discourtesy on the part of one naturalist towards another—I had no alternative but to decide for myself whether I would admit this bird into my book or not. I have done so for the following reasons:—

There are three Sparrow-Hawks very closely allied to each other, if indeed specific distinction exists between them. One of them is the Asiatic form of *M. badius*, Gmelin; the other two are African species, *M. sphenurus*, Rüppell, and *M. brachydactylus*, Swainson. I think it will be found on further investigation that these species have got mixed together, and that they are all, as far as the African skins are concerned, referable to one bird, namely, the subject of the present notice, and that the differences in specimens are variations, and not specific distinctions. If this view is correct, we can easily understand the source of confusion. I have shown in the previous notice that the wrong bird has been sent to this country as *M. sphenurus*. Mr. Gurney's skins of *M. brachydactylus* and *M. badius* are so exactly alike that it is impossible to detect any real distinction. Slight differences in measurements will occur in individuals as well as in the dried skins of birds originally of the same size.

$\frac{1}{3}$

ACCIPITER SPHENURUS.

Mr. Gurney says that there is a constant sexual difference of size between the two birds; that is, that the difference between the male and the female of *M. brachydactylus* is always less than between those of *M. badius*. This certainly was the case with those he kindly sent me, as will be seen by referring to the table in the previous notice. But then, if my surmise is true, that they are varieties of the same species, how are the skins originally selected by the collector, and separated into the two divisions? Why surely by some rule as arbitrary as that of a sexual difference in size. Now how would such a rule apply to our own *A. nisus?* Why the difference between the male and female of various specimens is very far greater, as far as my experience goes, than that shown to exist between *M. brachydactylus* and *M. badius;* and if these were separated from each other, we should have an equal right to call them two species. With regard to *M. sphenurus,* Rüppell, it will be seen by reference to the table in last notice, that the dimensions are less than those given for either *brachydactylus* or *badius,* and Rüppell's figure, plate 2, drawn to a scale, is even smaller than that from which the description was taken. Both were males; what then was this bird? The skins sent for it by M. Verreaux and M. Lauretta have been figured, and their dimensions given in the last notice. The slightest examination will show how different are the two birds.

Has then *M. sphenurus* Rüppell, become mingled with *M. brachydactylus?* Dr. Hartlaub, in a note to *M. brachydactylus,* in his "Ornithologie West Africa's," p. 14, says he thinks they are distinct, and gives as a reason that the cross bars on the tail feathers are right through, while they are only on the inner web

of *M. sphenurus*, the outer border being unspotted, like the back. But then this distinction will not apply as between *M. sphenurus* and *M. badius*, the tail feathers in the latter being barred only on the inner webs; and, as Mr. Jerdon, "Birds of India," p. 49, tells us, this is only the case with the old birds. In the young the bars go quite through.

Whether, however, there are three, or two, or only one species, I must leave for a more careful examination to make out. It has evidently been the occurrence of one of these birds that has induced Professor Blasius to give *A. badius* a place in his list, and by figuring this bird I shall give the means of comparison by which it may be discovered which is the real bird. Had I access to all the back numbers of the German or French ornithological periodicals, I confess that I have not time to wade through books which have no indices to guide us.

According to the view I have taken, these Sparrow-Hawks, including a small species figured by Smith ("Birds of Africa,") as *Accipiter polyzonoides*, will stand thus:—

	Micronisus polyzonoides.	The small race.
Asiatic and African types.	*M. sphenurus*, Rüp. *M. badius*, Gm. *M. brachydactylus.*	Varieties (?) of the median race.
European type.	*M. gurneyi.* *A. nisus.*	Examples of the large race.

All these birds have a close alliance with each other, and I regret that it was thought necessary, from the construction of the toes and tarsi, to form a new genus for the African and Asiatic forms, and more particularly that they should have given to them the name of *Micronisus*, seeing that we are bidding fair to shew a *micro-nisus* larger than a *nisus!*

The Calcutta Sparrow-Hawk, or Brown's Hawk, is well known as the Shikra, and is common throughout the whole of India. "It frequents," says Mr. Jerdon, ("Birds of India," p. 49, vol. i,) "open jungles, groves, gardens, and avenues. It either takes a low stealthy flight along the edges of a wood, garden, or hedgerow, and pounces on any unwary bird or lizard, or soars high in circles, and pounces down when it sees any prey. Its general food appears to be lizards, but it frequently seizes small birds, rats, or mice, and sometimes does not disdain a large grasshopper. It is more commonly trained than any other Hawk in India. It is very quickly and easily reclaimed, and though not remarkable for speed, can yet seize quails and partridges, if put up sufficiently close. It is, however, a bird of great courage, and can be taught to strike a large quarry, such as the common crow, the small grey hornbill, the crow pheasant, *(Centropus,)* young pea-fowl, and small herons."

"The Shikra breeds on trees from April to June, making a large nest of sticks, and has usually four eggs, white, much blotched with reddish brown."

The adult male has the upper plumage dark slaty brown, becoming at the end of the fourth or fifth year more "pale ashy grey," (Jerdon;) rusty on the shoulders and upper part of the scapularies; upper tail coverts and tail paler. The first two tail feathers unicolorous, the rest barred on their inner webs with black and greyish fawn, the tips of the feathers fawn-colour. Primaries dark brown, barred at their base with brown on a fawn-coloured ground. Upper wing coverts and scapularies dark brown; the tertiaries white, variegated and broadly tipped with brown; cheeks rusty; chin white, with a longitudinal stripe;

crop, abdomen, and flanks dirty white, thickly barred transversely with ferruginous bands; under tail coverts and thighs white; under wing coverts unspotted fawn-colour. According to Jerdon the iris is deep orange-colour; cere bright yellow; feet dark buff yellow.

In the adult female the upper plumage is hair brown; the primaries not so dark as in the male, and faintly barred with darker to the tip; the rufous on the shoulder and cheeks is clearer, much the same on the upper back. In other respects it resembles the male.

According to Mr. Jerdon the young bird is "dark reddish or dusky brown above; feathers edged with rufous, most broadly so in the male; back of the head and nape a good deal variegated with white; tail light ashy grey, with six dark bands; beneath white, with a central dark chin line; the breast and abdomen with large oval brown spots, longer on the breast, rounded on the abdomen; the thigh coverts rufescent white, with smaller spots; under tail coverts with a very few faint stripes. The male has usually fewer spots than the female. Irides pale yellow; feet yellow; bill bluish, dusky at the tip; and the cere yellow."

In this plumage, the bird, it will be observed, is very similar to the young of the Levant Sparrow-Hawk; but it is much smaller.

My figures are male and female from India, kindly sent me by Mr. Gurney. They are in adult plumage, but have not attained the five years old livery described by Mr. Jerdon. They are the birds referred to in the table. For the sake of comparison I have also given a copy of Rüppell's figure of *Accipiter sphenurus*, reduced to the same scale of one third natural size, (Vide "System. Uebers. der Vög. Nord. Ost. Africa's," pl. 2.)

FALCO ELEONORÆ.

FALCO ELEONORÆ. *Géné.*

Vol. I, Page 44.

In the first volume, page 44, I have given a figure of the adult of this species, (from Bonaparte's "Fauna Italica,") which, though somewhat stiff in its attitude, is, I believe, a very good drawing of the bird. It varies, however, very much in plumage, and owing to its unfortunate confusion with *F. concolor*, Temm., many erroneous descriptions and figures have found their way into ornithological works. Thus Hueglin, in his List of Birds collected on the Red Sea, (Ibis, vol. i, p. 338,) gives *F. eleonoræ* as synonymous with *F. concolor*, Rüppell, and describes the old male as "black schistaceous grey." Professor Blasius, however, (Ibis, vol. ii, p. 432,) is given as an authority for stating that the eggs of the birds described by Hueglin as *F. eleonoræ*, from the Archipelago of Dahalak, were those of *F. concolor* and not *F. eleonoræ*. There is also a tendency on the continent towards the belief in the identity of the two birds. Swainson, however, who was a most accurate observer, in describing *F. concolor*, (Birds of Africa, vol. i, p. 112,) remarks that it is seldom we meet with a Hawk which can so readily be distinguished from all others by its peculiar "deep slate colour, somewhat paler beneath, and with a brownish tinge in some parts of the upper plumage, etc."

Blasius maintains the perfect distinctness of the

two birds in his list of 1861, and assigns *F. concolor* a European locality in Spain. M. M. Jules Verreaux and O. Des Murs have both attempted to prove the identity of the two birds in the "Revue et Magasin de Zoologie," for 1862.

In his "Richesse Ornithologique du Midi de la France," M. Jaubert describes four different plumages which he says the bird assumes during the first four years.—

First.—The young of the year, when the plumage resembles that of the Hobby.

Second.—After the first year the head and all the upper parts become uniformly brown, without any red borders to the feathers; without the head marks or the reddish collar round the neck. This is the condition of the young as described by Géné, and is produced, according to Jaubert, by a partial moult and the wear and tear of the back feathers.

Third.—After the second moult, when the bird is three years old, it assumes a livery in which "it may be recognised as the type represented in the "Fauna Italica" of Ch. Bonaparte, and of which our collections contain a large series, representing various grades of colour, bringing this bird by degrees to the fuliginous plumage, which is only a dress worn off down to the shaft, and this it will soon throw off to assume the plumage of the old bird, which is characterized by a dark brown colouring on all the upper part of the body, and by an analogous tint on all the anterior parts, the feathers of which are edged by a reddish border, with a spear-shaped spot on the flanks and sides. It is by the progressive diminution of this border that the bird becomes more and more brown and unicolorous."

These stages of plumage are well illustrated by M.

Jaubert, in a plate containing three figures taken from life. To shew however the difficulty there is attached to this subject, I will copy the following from M. Jaubert's Supplement, just published, written a year or two after the above:—

"We owe to the kindness of M. Jules Verreaux a skin of *F. eleonora*, characterised by an unicolorous plumage of slate grey, denser on the mantle, wings, rump, and tail, slightly fuliginous on the throat and neck; all the feathers having the shafts darker and approaching to black; a black spot in front of the eye larger towards the base, where it forms a short moustache, which loses itself in the neighbouring tints, etc."

The plumage is, according to M. Verreaux, that of the adult. What then are the plumages of a fuliginous black with slate shades only on the back, which we consider to belong to the old bird? Simply varieties? Melanisms comparable to those of certain Buzzards, according to Susemihl, who gives as the adult the one we call three years old? The variety then must be more common than the type, for all the specimens of our collections killed in the south of France are more or less black, but never slate grey."

"One of these birds taken on the sea near the Balearic Isles, and also placed in the Marseilles Museum, has a plumage like that of an adult Hobby; blackish brown above, yellowish white and russet below, with long black streaks; rusty on the thighs and abdomen. Though differing from the others this plumage is also considered to be that of three years, or the adult of Susemihl, which comes to the same thing! We are then obliged to admit that the blackish and slaty liveries are varieties probably belonging to an advanced age. The plumage of the Eleonora Falcon varies more than any

other, and sometimes we find a similar tendency in the size."

By the kindness of Mr. Reeve, I am able to figure an excellent drawing with which he has favoured me of a specimen in the Norwich Museum, in the young or Hobby-like plumage, the cere, beak, and legs being coloured from a living specimen in Mr. Gurney's gardens at Catton. Of this specimen Mr. Gurney writes me,—"About three years ago I bought a living *F. eleonora*, which I still have, and which still retains the Hobby-like dress which it had when I bought it. I think, however, it is very gradually becoming darker, and its colours were never so bright as the one which Mr. Reeve is drawing for you; in this bird the cere is a dark bluish grey, legs and feet greenish yellow, iris dark hazel."

STRIX PUSILLA.

STRIX PUSILLA. *Daud.*

Strix passerina, LINNÆUS.

VOL. I, PAGE 124.

I HAVE given a full history of this bird in the first volume, and also a figure of the best and most authentic specimen which I could then obtain. Since that time Mr. Wheelwright has very kindly brought under my notice its Swedish form, and as it differs materially in colour from that which I have figured, I now give drawings from an adult and young bird which that gentleman has sent me. I also add the following to the history of this interesting species, contained in a letter from Mr. Wheelwright, dated Gardsjo, March, 1863:—"I have been in the forest lately, and found out more about this little Owl. It certainly breeds with us, and not sparingly, and I do hope to get you the nest this year. I have a live one now in a cage, and a most amusing pet it is. Although diurnal in its habits, it seems to sit very still until evening and very early morning. As far as I can make out this is the earliest bird in our forests; for the old poachers who go out before daybreak to shoot the Capercally on the perch in the spring, say that the first call-note they hear in the wood is this bird. They also say that as soon as they hear this in the spring they reckon it will not be long before the Capercally begins to 'lek' or play.

The note of this little Owl is a whistle,—one long loud 'whe-e-e,' like blowing into a key, then a number of finer notes quickly repeated—'Tiweet, tiweet, tiweet, tiweet'—not so loud. I have heard it till this spring. One night early in March I slept at a wood-watcher's cabin in the forest, and my host came into my room about 5 a.m., and told me to come out and hear it. The bird was in a fir plantation about eight hundred or one thousand yards from the house, and I distinguished the note very plain. I stole up quietly and identified the bird. I had often heard the sound before, and always took it for Tengmalm's Owl; so to make quite sure I shot it. It must have a large range in Scandinavia, for as you know I shot a family of young flyers at Quickiock, and I do not believe that this place is its most southern range, although they have never been found breeding in Scania, (nor for the matter of that can I learn that any one has really got authentic eggs,) and are very rare or only accidental in Denmark.

They are very bold and voracious for their size, and I have more than once seen them strike down a Titmouse in the forest. Although we know nothing for certain of its breeding habits, we may take it for granted that it lays more than two eggs, as stated by Temminck; for out of the family I saw at Quickiock, I obtained four specimens, and I am not certain but that one escaped."

NAUMANN'S THRUSH.

Family TURDIDÆ.

Genus TURDUS.

NAUMANN'S THRUSH.

Turdus naumanni, TEMMINCK.

IN vol. i, p. 192, I have introduced the figure and notice of a bird under the above name. The figure is taken from Gould's plate of *Turdus fuscatus,* which is given as a synonyme, and was at that time considered by Gould and other naturalists as identical with the true *T. naumanni,* figured in Plate LXVIII of Naumann's "Naturgeschichte der Vögel Deutschlands," and fully described at p. 288 of that work.

The identity of the two species was not however fully admitted by naturalists, and in the continuation of Naumann's work by Professor Blasius, they are described and figured as distinct. I have not been able to consult this volume of the work, but Dr. Sclater has entertained the question in the "Ibis," vol. iv, p. 319, admitting the correctness of this division, and giving a figure of what he considers the true *T. naumanni,* from a skin belonging to Mr. Gould, which was that of a bird shot at Shangai, in March, 1850.

Mr. Gould has been kind enough to lend me this skin, which is very faithfully copied in the "Ibis."

Whether the *Turdus naumanni* of Temminck is specifically distinct or not from *F. fuscatus*, Pallas, is a question I think which must be considered settled in the affirmative. But what are we to say of some of those birds which are given in ornithological works as the true *T. naumanni*.

M. Jaubert, in his "Richesse Ornithologiques," figures and describes two birds as *T. naumanni*. One of these is stated to be an adult male, the other a young one. The former was shot by M. Lauzin, in the Commune d'Allauch, in the month of December; the young one by M. Bonifay, in September, 1845. Neither of these birds have the slightest resemblance to the China specimen figured by Dr. Sclater in the "Ibis." M. Jaubert writes with a full knowledge that "Cette Grive voisine du *Turdus fuscatus* de Pallas." Referring however to Naumann's original figures, it must be confessed that they differ as much from M. Jaubert's as the latter do from Dr. Sclater's!

Are the figures given by Naumann and that of Dr. Sclater identical?—This question admits, I think, of easy solution. Both Naumann's figures, Plate LXVIII, are *young birds*, but in the history he gives a most minute account of the adult male, and this *description* agrees most accurately with the Shangae specimen, from which Dr. Sclater's figure was taken. I have decided, therefore, to give a drawing of this skin, and also a copy of the youngest (No. 2,) of the two figures in Naumann's plate.

Dr. Schrenck, in his "Amur Reise," has also described a young male *T. naumanni*, and pointed out wherein it differs from *T. fuscatus*, which is very common in that country. Assuming that his account of *T. naumanni* represents the real bird, it would seem to settle the

question of its specific difference, and that Jaubert's figures must be referred to *T. fuscatus*, which bird will therefore have to be admitted separately into the European fauna, thus allowing the figure given in my first volume to stand as the representative of that bird.

The following is translated verbatim from Naumann's account of *T. naumanni*:—

"This prettily marked bird is, when full grown, adorned with such marked and beautiful colours that it cannot easily be mistaken for another bird. Even the young bird has much to distinguish it. In the markings of the head and the red underwings it resembles the Redwing, and in the colour of the back and the breast it is like the Fieldfare, yet it is so decidedly distinct from these, as from all known common birds of this family, that any one may at the first glance take it for a peculiar species.

In form it is like the Redwing, but the tail is a little longer, and in size the bird is intermediate between the Redwing and Fieldfare. Its length is nine inches and a half; wings, when spread, sixteen inches; the rather straight tail three inches and a half to three inches and three quarters, and the wings at rest reach scarcely to the middle of the tail. The beak resembles that of the Fieldfare, it is weaker in proportion; upper mandible slightly curved, from five eighths to three fourths of an inch long, and blackish. The somewhat shorter under mandible is at the gape reddish yellow, yet the beak in the old birds is much yellower, and this extends over a great part of the upper mandible. The nostril is longish and oval. The rictus is garnished by some stiff bristles. The angle of the mouth yellow; cere reddish grey, and in the old birds in spring yellow; iris dark brown; feet as in other Thrushes; toes blackish,

with fleshy red appearing through; in old birds dark or brownish flesh-colour; middle-sized curved claws dark brown, and blackish at the points. Tarsus one inch and a quarter; middle toe and claw one inch one line; hinder toe with claw three quarters of an inch.

Plumage. *Old male.*—This is a handsome bird. Upper plumage olive grey, darkest on the top of the head and wing feathers, and on the back and lesser wing coverts mixed with rusty red; upper tail coverts and sides of the neck rusty red, with olive grey points; a broad stripe from the base of the beak over the eye to the neck; foremost half of cheeks and throat rusty reddish white; angle of mouth and hinder part of cheeks dark grey; a small border on both sides of the lower mandible down to the sides of the neck, and as far as the breast covered with small nearly round dark grey spots; feathers on the breast, on the flanks, and under tail coverts rusty red with whitish grey borders, which are broader on the sides, and where the rusty red runs into arrow-shaped spots; middle of the breast and body underneath white, with small rusty red longish spots, which are however almost entirely covered by the large white ends of the feathers. The tail is rusty red; the middle feathers and the outer borders of the remaining feathers from the point half way upwards brown, which makes the end of the closed tail of that colour; the under wing coverts rusty red."

This description might have been taken from Mr. Gould's skin, a figure of which Dr. Sclater has given in the "Ibis," vol. iv, and is the same bird as that shot by Mr. Swinhoe near Shangae, and called by him the "Red-tailed Fieldfare." But it is not a description of either of the figures in Naumann's plate, which he now goes on to describe as follows:—

"*A rather younger male*, fig. 1, Plate LXVIII, is on the body and upper part of the neck, lesser wing coverts, back, and upper tail coverts, greyish olive brown, darkest on the head and tail coverts, clearest on the back, having here mingled with the olive grey, spots of rusty red of different forms, which are however only visible when the feathers are rather ruffled; wings brown, with dull rusty borders to each feather, and lighter—almost whitish—edges on the greater coverts; the light borders of the primaries are also so broad that they form of themselves a rusty yellow patch; the hind part of the greater coverts are not only edged with rusty red, but have also, like the middle row of the coverts, a rusty yellow streak down the shafts; the under wing coverts rusty red, and this colour shews itself on the under side of the primaries as far down as the point; over the eye is a brown yellowish white streak, shaded off into grey brown; rictus and cheeks olive brown mixed with white; throat yellowish white, which blends into red on the side of the neck, where it forms a light patch, and towards the back appears as spots; from the rictus towards the throat and crop a number of dark brown triangular spots; the crop is a brown and rusty colour mixed on a yellowish white ground, and thickly spotted with dark brown; the whole breast and under parts of the body white, unspotted in the centre; the sides, however, are covered with dark brown triangular 'Thrush-like' spots; vent and under tail coverts clear rusty red, with the feathers bordered with greyish white and rust-coloured spots, those on the sides assuming a spear-head shape, which may also be traced on the side of the crop, though they are here more mixed with black brown; the feathers on the side of the breast, which have at their tips the above Thrush-like spots, have also on the remaining

uncovered part of the feathers triangular rusty spots. The tail underneath is a pale grey brown, the side feathers with a lighter border; the upper tail feathers have a light rusty brownish border.

The young after the first moult (fig. 2,) is, contrary to the rule in young Thrushes, a reddish brown, instead of olive brown or grey—it is more like that of the Fieldfare, the feathers being edged with whitish grey; on the rump the feathers are bordered with a darker rust brown, and the upper tail coverts dark brown with reddish grey edges. From the root of the beak extends a broad yellowish white streak spotted with rust, becoming lost in the nape; the cheeks are olive brown, with a rusty yellowish white spot beneath them; throat white, tinted strongly with rust yellow, and on the sides of the throat strongly marked with small triangular dark brown spots; on the crop the feathers are brown black, with broad greyish white and rust yellow-tinted borders; middle of the belly and breast clear white, and the under part of the thigh spotted with dark brown; the under wing coverts rust brown, white at the tips and sides of the feathers; shoulder like the back; the first primary brown black, the next eight blackish, with broad dirty rust yellow borders; greater wing coverts the same, but both white tips; lesser wing coverts black brown, bordered with broad reddish rust; under wing coverts like those of the Redwing; primaries underneath are washed with the same rusty brown. The tail feathers brownish black, with a narrow grey border, which loses itself at the rump in a broad rust brown bordering, so that the tail appears unicolorous.

This bird (No. 2, Plate LXVIII,) appears to be a female, though being decayed when received, the sex was not made out by dissection, which however is often

difficult with a young bird in autumn, even when fresh. Many birds of this age have rusty yellow spots on the feathers of the back and middle wing, but only shew them when the feathers are shed; also the tail feathers are strongly rust yellow at their bases, and have light red-coloured shafts."

Now both the last two birds may from these descriptions be easily confounded with the young of *T. fuscatus*, and no doubt they have been, so frequently as to lead to the species being considered identical.

Naumann himself much regrets that the *old male* which he first describes, and which answers in every point to the figure I have given from Mr. Gould's Chinese skin, did not reach him soon enough to be figured. He takes great pains, however, to describe it, and I hope that the long extract I have given from his work, and the two figures, one of the adult and the other young of the year, No. 2 in Naumann's Plate LXVIII, the last of the three described, will be sufficient to enable ornithologists to distinguish this bird in future.

The principal points of difference between *T. naumanni* and *T. fuscatus*, as laid down by Dr. Schrenck, are a much clearer brownish olive grey on the upper plumage in the former, by the rusty-coloured shaft spots on each feather, the blackish and rusty brown spots on the crop and breast, the rusty arrow-shaped spots on the flanks and sides of the breast, the smaller rusty brown borders on the greater wing coverts and under primaries, and the broad rusty on the outer tail feathers. It must be borne in mind, however, that Dr. Schrenck only got one specimen, and that resembles the first figure in Naumann's plate, and the second in the description I have quoted. His specimen is in spring

plumage, having been shot on the 17th. (29th.) of April.

He describes *T. fuscatus* as very well drawn by Gould as *T. naumanni*, which makes my figure taken from his work a fair representation of that bird. However different they may be, I am still of opinion that they are *very closely allied to each other*.

SIBERIAN THRUSH.

Family TURDIDÆ.

Genus TURDUS.

SIBERIAN THRUSH.

Turdus sibiricus.

Turdus sibiricus,	GMELIN.
" *leucocillus,*	PALLAS; Fauna Rossica.
Cychloselys sibiricus,	BONAPARTE; Ex. Gm. Cat. Parz., 1856.
Merula sibirica,	BONAPARTE; 1850.
Oreocincla sibirica,	JAUBERT; Ex. Gm. Rich. Orn., p. 202.

Specific Characters.—Upper plumage bluish black; a pure white stripe from the forehead above the eye to the occiput; spots on the crop and abdomen black upon a white ground. Length nine inches.

THIS bird is, as its name implies, an inhabitant of Siberia, but it has occurred a sufficient number of times in Europe to merit a place in its avi-fauna.

We have the authority of Pallas for its occurrence in Southern Russia; of Professor Blasius for its appearance in Germany; and M. Jaubert, in his "Richesses

Ornithologiques," mentions two instances of its having been captured in France. Homeyer has described it as *T. atro-cyaneus*, upon the authority of a fine specimen killed in the north of Germany.

In Dr. Sclater's excellent paper on the "Geographical Distribution of the genus *Turdus*," ("Ibis," vol. iii, p. 278,) we find *T. sibiricus* in the palæarctic region, appearing in Siberia, Amoor Land, Japan, and China; and we have its occurrence in these countries verified by Mr. Swinhoe and other writers. Dr. Schrenck, however, does not mention it in his "Amur Reise."

Of its habits and nidification I am unable to say anything.

Temminck's description of this bird is as follows:— The adult male. The whole plumage of a dark bluish black; the throat and front of the neck a deep black; very large eyebrows of a pure white; the wing and tail feathers of a dull black, but all the wing feathers white upon the inner webs, forming an oblique band upon the internal surface of these parts; the three lateral feathers of the tail and the under coverts terminated by a little white spot; beak black; feet brown. Length nine inches.

The adult female has the throat whitish, marked with little brown dots, and the lateral part of the throat framed by a longitudinal black band; the cheeks speckled with whitish brown; the large band of the eyebrow a yellowish white. The rest like the male.

The young of the year differ considerably in the colours of their plumage. All the upper parts of an olive brown; the wings and tail a deep brown, the primaries having on their inner web a tint of russet white; the eyebrows a yellowish white, marked with brown streaks; throat and cheeks of a reddish white,

speckled with olive, but each feather having in the centre a great whitish or slightly reddish spot, in the shape of a spear head; flanks, thighs, sides of belly, and abdomen of an olive tint, so that only the central line of the belly is pure white; great white lanceolated spots terminate the feathers underneath the tail; beak and feet brown.

My figure is a copy of a male bird figured by M. Jaubert in the "Richesse Ornithologiques."

Family PARIDIDÆ.

Genus PARUS.

NORTHERN TIT.

Parus borealis, DE SELYS.

UNDER the head Siberian Tit, and at page 21, vol. iii, there will be found some valuable remarks from Mr. Newton and Mr. Wheelwright about the *Parus borealis,* De Selys, and its presumed distinctness from our Marsh Tit, *P. palustris.* It has been suggested to me that I should take the opportunity of giving a figure of it in this part of my work. As I have some fine specimens, sent me by Mr. Wheelwright, I have much pleasure in doing so.

At first sight it would be difficult for anyone who had not seen much of the northern race, to find any real distinction between the two birds; but Mr. Wheelwright has given several points in which they constantly differ; and it will be found by the following letter, from the celebrated ornithologist, Lilljeborg, that these are not only constant, but, as he expresses it, are as marked as the differences between several other birds of acknowledged specific distinction.

Extract of letter from Lilljeborg to Professor Hammacren, of Carlstad:—"Although *P. borealis* comes very near to *P. palustris,* still I reckon them as distinct

species, because I think I have always found a constant difference between them, both in structure and habit. With the exception of the immature dress, I have always found a difference in the appearance of the black colour on the head, the white on the cheeks, the grey brown on the back, as well as the broad white edges on the wing feathers. Since I have observed this, I can, at a tolerably long distance, distinguish *P. borealis* by the white colour of the cheeks, which extends far back; and other naturalists who have been with me on excursions have done the same. The black colour on the head of *P. borealis* I have always found different in the nearly total absence of metallic gloss, whereas *P. palustris* has always this distinct. In the summer plumage I have found in *palustris* the grey brown colour on the back darker than in *borealis* in the same dress, and I have always found the former wants the white edges on the outer webs of the primaries. Nearly always I have found the wings of *borealis* shorter than in *palustris*, and the exceptions are so few that the fact appears to be normal. Degland's remarks about the colour of the legs have evidently been made from stuffed specimens, and in all such the legs of this, as other birds, become darker. Anyone who has chanced to hear *P. palustris* and *P. borealis* together, can easily distinguish that the note of the latter is both sharper and rougher. The note, 'tit, tit,' is sharper, and that which follows it, 'tiah, tiah,' is rougher and more lengthened. On this I lay great weight.

"In Scania I have never seen *P. borealis* otherwise than in fir forests, and here (Upsula) I have never seen *P. palustris* except in leafy plantations, parks, gardens, etc. Here *borealis*, on the contrary, is found

sometimes near villages and farms, and we even see them in leafy plantations; but they are found principally in the fir forests, and here it is more common than *palustris*. I therefore stick to the opinion I have previously given about them, and shall do so until proof is adduced that *borealis* is only the northern form of *palustris*. I do not know how the note can be so dissimilar. One thing is certain—they are two different forms. Each person may, after all, agree about their being different species, or not.

"Professor Middendorff, of St. Petersburg, to whom I sent specimens of both, and who only met with *borealis* in Siberia, considers it only a variety of *palustris*. *Probably he has never seen them together in a free state,* nor heard the difference in their notes. When I first shewed Professor Nilsson *P. borealis* he directly found the specific difference striking. So much can opinions vary in such cases, that before forming a decided conclusion, we must have before our eyes those forms about which there can be no doubt that they are those of which we are reasoning. *P. borealis* is as distinct from *P. palustris* as *Sylvia abietina* is from *S. trochilus*, *S. arundinacea* from *S. palustris*, *S. philomela* from *S. luscinia*, *S. hypolais* from *S. polyglotta*, etc., although it is less distinct from *P. palustris* than is *P. sibiricus*. The only thing which can make *less sure* its title to specific rank, would be if it could be shewn that *P. palustris* towards the north by degrees receives as well the same apparel as the same call-note. This is an interesting question, which naturalists should endeavour to find out.

"Upsula, Nov. 11th., 1855. T. Lilljeborg."

The following are the measurements of my specimen

of *P. borealis*, as compared with Yarrell's of *P. palustris*, in inches:—*P. borealis*, length four and nine tenths, carpus to tip two and three fifths, tail two and two fifths, tarsus three fourths, beak from gape one half, beak from forehead, five lines and a half. *P. palustris*, length four and a half, carpus to tip two and three eighths.

The sexes do not differ in size or plumage.

Mr. Wheelwright has kindly sent me a nest containing nine eggs. The nest is built of the under bark of the alder, and is loosely made, and slightly lined with hair; no moss or feathers. The eggs are very similar to those of *palustris*, but the spots are darker and not so thick.

Genus Alcedo. *(Linnæus.)*

SMYRNA KINGFISHER.

Alcedo smyrnensis.

Alcedo smyrnensis,	Linnæus.
Halcyon smyrnensis,	Of Indian Authors.

It is to the scientific researches of the late lamented Mr. Strickland that we are indebted for the re-discovery in Asia Minor of this well-known Indian species of Kingfisher. Since then it has been found (as he surmised it would) in the adjacent Turkish European Islands. It was first introduced into the European list by Bonaparte, as stated by M. Pazzudaki, in his "Catalogue des Oiseaux d' Europe," published in 1856, and it is included in the list of European birds published by Professor Blasius in 1861, the Turkish European Islands being cited as a locality.

Mr. Strickland read a paper at the British Association at Manchester in 1842, entitled "The re-discovery of *Halcyon smyrnensis* in Asia Minor," in which he proves that Albin's figure of the Smyrna Kingfisher, published in his "Natural History of Birds," is in every respect identical with the bird known in India as the *Halcyon smyrnensis;* and that the difference between that bird and Albin's figure arose from the

SAVANA KINGFISHER.

former being in immature plumage. The following is an extract from this paper:—

"During my residence at Smyrna in the winter of 1835-6, I failed in meeting with any traces of this bird, although two other species of *Alcidinidæ*, namely, *Alcedo ispida*, Linnæus, and *Ceryle rudis*, Hasselquist, were not infrequent. The *Halcyon smyrnensis*, however, belonging as it does to an insectivorous genus, which is rarely met with far beyond the tropics, could hardly be expected to occur so far north as Smyrna in the depth of winter. Failing in this attempt, I took occasion, at a later period, when supplying that ardent and philosophic zoologist, Mr. Edward Forbes, with a list of ornithological desiderata to be sought for in the Levant, to call his particular attention to the long-lost 'Smyrna Kingfisher,' and I am happy to say his researches have at last been crowned with success. In a letter from him, dated Macri, on the coast of Lycia, at the end of February last, (1842,) he says,—'One of the sailors has just shot a large Kingfisher, which I take to be the one wanted. Three or four have been seen, but not got at. The Common Kingfisher is also very abundant, or something like it. The large bird was brought alive: its plumage is very beautiful. I have drawn it, and Graves is this moment skinning it; we shall send the skin to you by an early opportunity.'

"Through the kindness of Captain Graves this specimen has since been forwarded to me, and on comparing it with a series of specimens from India, it turns out to be in every respect specifically identical with them. It is in full adult plumage, possessing the rufous *lesser* and black medial coverts which distinguish the perfect bird in India. We may therefore henceforth,

without hesitation, retain the original specific name, of *smyrnensis* for the specimens from India no less than for those of Asia Minor; and from the proximity of the latter country to Crete and the Morea, we may anticipate the future admission of this beautiful and interesting species into the fauna of Europe."—("Ann. and Mag. of Nat. Hist.," vol. ix, first series, 1842, p. 441.)

It is singular that this clear statement should have been misunderstood by some of our best ornithologists, who are under the impression that Strickland made the two birds distinct. Even Mr. Jerdon, in his description of this bird in his recent publication, "The Birds of India," fell into this mistake, which, however, he has corrected in his errata. Mr. Jerdon has also fallen into the error of giving Boddaert's name of *fuscus* to this bird, but this arose from the first mistake. Notwithstanding, however, Mr. Jerdon has given us an interesting description of what is far more important, namely, the bird's habits, which I will quote. It will be seen that it is partly insectivorous, which I presume may be said equally of our own Kingfisher, could we follow it in its diving excursions.

"This well-known Kingfisher is very abundant in most parts of India, and is found throughout the whole peninsula and Ceylon, up to the base of the Himalayas, and extending through all the countries to the east as far as China."

"It prefers a wooded country, but is not found in thick forests; and it is to be met with about most large villages and cantonments. It frequents banks of rivers and brooks, edges of tanks, as also the neighbourhood of wells and wet paddy fields; but it is as frequently found away from water, in groves of trees, gardens,

open jungle, and dry cultivation, perching upon trees, poles, walls, outbuildings, and any similar situations. Here it watches for a land-crab, mouse, lizard, grasshopper, or other insect, and pounces down upon it, returning to its perch to devour it. Near water it catches fish, *(for which it sometimes, though rarely, dives,)* frogs, tadpoles, and water-insects. Layard says that he has seen it seizing butterflies. It has a loud, harsh, rattling scream, which it almost always utters when flying. It is stated to build its nest sometimes under a projecting stone on the bank of a nullah, sometimes in a hole in a bank, at other times in holes in decaying trees, and to lay from two to seven round fleshy eggs."

Of its habits, or even a reference to its appearance in Europe I can give no more information than that afforded by the fact (stated by Blasius) of its being found in the Turkish Islands, and being included in his own list of European birds. I wrote to Professor Blasius, but as I received no answer, I presume my letter miscarried.

Meanwhile I have much pleasure in giving a drawing of an Indian specimen, marked "Shot at Doo Saree, 22 Jan., 1850," sent to me most kindly by Mr. Gould.

The following is a description of this skin:—Length eleven inches, carpus to tip five inches, tail four inches, beak from forehead two inches, from gape two inches and three fifths, tarsus half an inch.

Head, nape, sides of neck, shoulders, abdomen, under wing and tail coverts dark chesnut brown; scapulars dull greenish blue; back and upper tail coverts bright turquoise blue; upper wing coverts black; primaries white on their basal half, with the outer web blue, the terminal half dark brown; first short, second and

fifth of equal length, third and fourth slightly longer, of equal length, and longest, sixth rather longer than seventh, which is the same size as the first; the secondaries and tail feathers above bright cærulean blue, in some lights having a sea-green tint; throat, tips of a few feathers on the crop, and the middle of the wing feathers below pure white; the terminal portion of the wing feathers and the tail below glossy dark brown.

The bill and feet in the skin are of course faded: according to Jerdon they are,—"Bill rich coral red; feet vermilion red; eyes brown."

The lower figure on the plate of *Strix pusilla* is the young bird.

LIST OF EUROPEAN BIRDS.

[In this List E. means Europe. C. Central Europe. EE. Eastern Europe. S., South, W., West, N., North of Europe. As., Asia. Af., Africa. Am., America. These localities have been principally taken from the "List" of Blasius. Yar. and Mor. refer to the volumes of Yarrell and Morris on British Birds in which the species is to be found. (?) doubtful, either as to species or authority of occurrence, though admitted into the list by Blasius and others. (*a*) accidental, though more or less frequent visitors.

CLASS—AVES.

Division I.—HETEROPHAGA,

(The young of which cannot feed themselves.)

Order I.—RAPACES.

Family I.—VULTURIDÆ.

Genus 1.—*Vultur*, Ill.

1. (*a*) V. auricularis, Daud. Africa, France. Sociable Vulture, Bree, 1.
2. V. monachus. L. cinereus, Gm., S. Cinereous Vulture, Bree, 1.
3. V. fulvus, L. S. Griffon Vulture, Yar., 1, Mor., 1. [Var. *occidentalis, Schlegel.* S. W. *Rüpellii, Brehm,* Afr., N.E.—*Blasius.*]
4. V. percnopterus, L. S. Egyptian Vulture, Yar., 1, Mor., 1.

Sub-genus—*Gypaetos*, Storr.

5. V. barbatus, L. S. Bearded Vulture, Bree, 1.

Family II.—FALCONIDÆ.

Genus 2.—*Falco*, L.

6. F. islandicus, Lath., Schleg. Candicans, Bs. N.W. Iceland. Iceland Jer-Falcon. Yar., 1.
7. F. candicans, Gm., Schleg. N.W. Greenland. Greenland Jer-Falcon, Yar., 1, Mor., 1.
8. F. gyr-falco norvegicus, Wolley. Gyr-falco, L. F. candicans, Bs. N. Sweden and Norway. Norwegian Jer-Falcon, Bree, 1.
9. F. sacer, Schleg. Lanarius, Tem. E. Saker Falcon, Bree, 1.
10. F. lanarius, Schleg. SE. Lanner Falcon, Bree, 1. [Var. *feldeggi, Schleg.* Dalmatia. *Alphanet, Schleg.* Greece and Egypt. *Tanypterus, Licht.* Nubia. *Cervicalis, Licht.* S. Africa.—*Blasius.*]
11. F. peregrinus, L. E. Peregrine Falcon, Yar., 1, Mor., 1. [Var. *anatum, Bp.* Am. *Melanogenys, Gld.* Ocean. *Peregrinator, Sund.* Asia. *Minor, Schleg.* Afr. *Barbarus, L.* Malta. *Peregrinoides, Mühle.* Greece. *Punicus, Swn., Jun.—Blasius.*]
12. F. subbuteo, L. E. Hobby, Yar., 1, Mor. 1.

13 F. æsalon, L. E. Merlin, Yar., 1, Mor., 1.

14. F. eleonoræ, Géné. S. Eleonora Falcon, Bp., Faun. Ital., Bree, 1 and 4.

15. F. tinnunculus, L. E. Kestrel, Yar., 1, Mor., 1.

16. F. tinnunculoides, Tem. Cenchrii, Naum. S. SE. Lesser Kestrel, Bree, 1.

17. F. vespertinus, L. SE. E. Red-footed Falcon. Yar., 1, Mor., 1.

Sub-genus—*Astur*. Bechst.

18. F. palumbarius, L. E. Goshawk, Yar., 1, Mor., 1.

19. F. gabar, Lath. Erythrorhyncus, Swn. Greece, Portugal, Africa. Little Red-billed Hawk, Bree, 1.

Sub-genus—*Accipiter*. Briss.

20. F. nisus, L. E. Sparrow-hawk, Yar., 1, Mor., 1.

Sub-genus—*Micronisus*. Gr.

21. (*a*) F. gurneyi, Mihi, nov. sp. EE. Levant Sparrow-hawk, Bree, 4, App.

22. (?) F. badius, Gm. E. SE.—*Blasius*. Calcutta Sparrow-hawk, Bree, 4, App.

Sub-genus—*Circus*. Sav.

23. F. rufus, Briss. E. Marsh Harrier, Yar., 1, Mor., 1.

24. F. cyaneus, L. E. Hen Harrier, Yar., 1, Mor., 1.

25. F. cineraceus, Mont. E. Montagu's Harrier, Yar., 1, Mor., 1.

26. F. pallidus, Sykes. C. SE. Pale-chested Harrier, Bree, 1.

Sub-genus—*Aquila*. Briss.

27. F. fulvus, L. E. Var. F. barthelemyi, Jaub. C. S. Golden Eagle, Yar., 1, Mor., 1.

28. F. imperialis, Bechst. Heliaca, Sav. S. Imperial Eagle, Bree, 1.

29. F. bonelli, Tem. S. Bonelli's Eagle, Bree, 1.

30. (?) F. clanga, Pall. E. C. SE. Greater Spotted Eagle.

31. F. nævius, L. E. N. C. Spotted Eagle, Yar., 1, Mor., 1.

32. (*a*) F. nævoides, Cuv. Rapax, Tem. S. France. Tawny Eagle, Bree, 1.

33. F. pennatus, Gm. E. S. Booted Eagle, Bree, 1.

34. F. albicilla, L. Ossifraga, Briss. E. White-tailed Eagle, Yar., 1, Mor., 1.

35. F. leucoryphus, Pall. Macei, Gr. E. SE. Pallas's Sea Eagle, Bree, 1.

Sub-genus—*Pandion*. Sav.

36. F. haliaëtos, L. E. Osprey, Yar., 1, Mor., 1.

Sub-genus—*Circaëtos*. Vieill.

37. F. brachydactylus, Tem. Gallicus, Gm. Short-toed Eagle, Bree, 1.

Sub-genus—*Buteo*. Bechst.

38. F. buteo, L. Vulgaris, Bechst. E. Common Buzzard, Yar., 1, Mor., 1.

39. F. tachardus, Daud. Buteo, var., Bs. SE. African Buzzard, Bree, 1.

40. F. lagopus, Brun. E. Rough-legged Buzzard, Yar., 1, Mor., 1.

41. F. rufinus, Rüp. Ferox, Gm. Hypoleucos, Pall. S. EE. Long-legged Buzzard, Bree, 1.

Sub-genus—*Pernis*. Cuv.

42. F. apivorus, L. E. Honey Buzzard, Yar., 1, Mor., 1.

Sub-genus—*Milvus*. Briss.

43. F. milvus, L. Regalis, Briss. E. Kite, Yar., 1, Mor., 1.

44. F. ater, Gm. Niger, Briss. E. Black Kite.

45. F. ægyptius, Gm. Parasiticus, Lath. S. EE. Arabian Kite, Bree, 1.

Sub-genus—*Elanus*. Sav.

46. (*a*) F. melanopterus, Lath. Greece, Germany, N Africa. Black-winged Kite, Bree, 1.

Family III.—STRIGIDÆ.

Genus 3.—*Strix*. L.

Section 1.—Accipitrines.

47. S. lapponica, Retz. N. Lap Owl, Bree, 1.

48. S. nyctea, L. N. Snowy Owl, Yar., 1, Mor., 1.

49. S. uralensis, Pall. EE. NE. Ural Owl, Bree, 1.

50. S. funerea, Lath. Nisoria, Meyer, Hudsonia, Vieill. N. Hawk Owl, Yar., 1, Mor., 1.

51. S. aluco, L. E. Tawny Owl, Yar., 1, Mor. 1.

52. S. flammea, L. E. White Owl, Yar., 1, Mor., 1.

53. S. psilodactyla, L. Noctua, Retz. et Auct. C. S. Little Owl, Yar., 1, Mor., 1. Var. meridionalis, Schleg. S.

54. S. tengmalmi, Gm. Funerea, Bs. N. Tengmalm's Owl, Yar., 1, Mor., 1.

55. S. pusilla, Daud. Passerina, L. N. Least European Sparrow-owl, Bree, 1, and 4, App.

Section 2.—Striges Cornua.

56. S. brachyotus, Gm. N. C. Short-eared Owl, Yar., 1, Mor., 1.

57. S. bubo, L. N. Great-eared Owl, Yar., 1, Mor., 1. Var. scandiaca, L. NE.

58. S. ascalaphus, Sav. S. Egyptian Eared Owl, Bree, 1.

59. S. otus, L. E. Long-eared Owl, Yar., 1, Mor., 1.

60. S. scops, L. S. Scops-eared Owl, Yar., 1, Mor., 1.

Order II.—OMNIVORES.

Family IV.—CORVIDÆ.

Genus 4.—*Corvus*. L.

61. C. corax, L. E. Raven, Yar., 2, Mor., 1.

62. C. corone, L. E. Carrion Crow, Yar., 2, Mor., 1.

63. C. cornix, L. E. Hooded Crow, Yar., 2, Mor., 1.

64. C. frugilegus, L. E. Rook, Yar., 2, Mor., 1.

65. C. monedula, L. E. Jackdaw, Yar., 2, Mor., 1. Var. C. monedula nigra, Frisch. Black-headed Jackdaw, Bree, 1.

Genus 5.—*Pica*. L.

66. P. caudata, Ray. E. Magpie, Yar., 2, Mor., 1.

67. P. cyanea, Wagler. SW. Azure-winged Magpie, Bree, 1. Var. cookii, Bp. SW.

Genus 6.—*Garrulus*. Briss.

68. G. infaustus, L. N. Siberian Jay, Bree, 1.

69. G. glandarius, L. E. Jay, Yar., 2, Mor., 1. Var. japonicus, Schleg. NE As. Brandtii, Eversm. N As. Minor, Verr. Af.

70. G. melanocephalus, Géné. Asia. Black-headed Jay, Bree, 1. [Var. *krynickii, Kal.* SE. *Cervicalis, Bp.* Af.—*Blasius.*]

Genus 7.—*Nucifraga.* Briss.

71. N. caryocatactes, L. E. Nutcracker, Yar., 2, Mor., 1.

Genus 8.—*Pyrrhocorax.* Tem.

72. P. pyrrhocorax, Tem. Alpinus, Vieill. SW. Alpine Chough, Bree, 1.

73. P. graculus, L. SW. Chough, Yar., 2, Mor., 1.

Family V.—STURNIDÆ.

Genus 9.—*Sturnus.* L.

74. S. vulgaris, L. E. Common Starling, Yar., 2, Mor., 1.

75. S. unicolor, Marm. S. (Var. vulgaris, Bs.) Sardinian Starling, Bree, 1.

Genus 10.—*Pastor.* Tem.

76. P. roseus, Tem. S. E. Rose-coloured Pastor, Yar., 2, Mor., 1.

Family VI.—AMPELIDÆ. Bp.

Genus 11.—*Bombycilla.* Tem.

77. B. garrula, Vieill. N. Bohemian Waxwing, Yar., 2, Mor., 1.

Order III.—INSECTIVORÆ.

Family VII.—LANIIDÆ. Bp.

Genus 12.—*Lanius.* L.

78. L. excubitor, L. Cinereus, Briss. E. Grey Shrike, Yar., 1, Mor., 1.

79. L. meridionalis, Tem. S. Great Grey Shrike, Bree, 1.

80. L. minor, Gm. C. S. Lesser Grey Shrike, Bree, 1.

81. L. personatus, Tem. Nubicus, Licht. SE. Masked Shrike, Bree, 1.

82. (*a*) L. tschagra, Le Vaill. Spain. Hooded Shrike, Bree, 1.

83. L. rufus, Briss. C. S. Woodchat Shrike, Yar., 1, Mor., 1. Var. paradoxus, Brehm, SW.

84. L. collurio, L. C. S. Red-backed Shrike, Yar., 1, Mor., 1.

Family VIII.—MUSCICAPIDÆ.

Genus 13.—*Muscicapa,* L.

85. M. grisola, L. E. Spotted Flycatcher, Yar., 1, Mor., 3.

86. M. albicollis, Tem. Collaris, Bechst. C. S. White-collared Flycatcher, Bree, 1.

87. M. atricapilla, L. E. Pied Flycatcher, Yar., 1, Mor., 1.

88. M. parva, Bechst. S. E. England. Red-breasted Flycatcher, Bree, 1.

Family IX.—TURDIDÆ.

Genus 14.—*Turdus.* L.

89. T. viscivorus, L. E. Missel Thrush, Yar., 1, Mor., 1.

90. T. pilaris, L. N. C. Fieldfare, Yar., 1, Mor., 3.

91. (*a*) T. naumanni, Tem. N As., Germany. Naumann's Thrush, Bree, 4, App.

92. T. fuscatus, Pall. N As., France. Brown Thrush, Bree, 1, as naumanni.

93. T. musicus, L. E. Song Thrush, Yar., 1, Mor. 3.

94. T. iliacus, L. N. Redwing, Yar., 1, Mor., 3.

95. T. torquatus, L. E. Ring Ouzel, Yar., 1, Mor., 3.

96. T. merula, L. E. Blackbird, Yar., 1, Mor., 3.

97. (*a*) T. migratorius, L. N Am. Germany. Migratory Thrush, Bree, 1.

98. (*a*) T. atrigularis, Tem. Dubius, Bechst. N As., Germany, Black-throated Thrush, Bree, 1.

99. (*a*) T. pallidus, Gm. T. pallens, Pall. N As., Italy. Pale Thrush, Bree, 1.

Sub-genus—*Petrocincla*. Vigors.

100. T. saxatilis, L. C. SE. Rock Thrush, Yar., 1, Mor., 3.

101. T. cyaneus, L. S. Blue Thrush, Bree, 1.

Genus 15.—*Ixos*. Tem.

102. (*a*) I. obscurus, Tem. Af., Spain. Dusky Ixos, Bree, 1.

Genus 16.—*Oriolus*. L.

103. O. galbula, L. C. S. Golden Oriole, Yar., 1, Mor., 3.

Genus 17.—*Cinclus*. Bechst.

104. C. aquaticus, Bechst. C. S. [Var. *C. melanogaster, Br.* N. *C. leucogaster, Eversm.* N As. *C. pallasii, Tem.* NE As., Helig.—*Blasius*.]

Family X.—SYLVIIDÆ.

Genus 18.—*Sylvia*. Lath.

Division 1.—Rutocilla. Mühle.

105. S. tythys, Lath. E. Black Redstart, Yar., 1, Mor., 3. Var. carii, Gerbe, C. S. Bree, 2.

106. S. erythrogastra, Mühle. E. SE. Guldenstadt's Redstart, Bree, 2.

107. S. phænicurus, Lath. E. Redstart, Yar., 1, Mor., 3.

Division 2.—Humicolæ. Mühle.

108. S. cœrulecula, Mühle. N. E. Swedish Blue-throated Warbler, Bree, 2.

109. S. suecica, L. C. Blue-throated Warbler, Yar., 1, Mor., 3.

110. (*a*) S. calliope, Pall. N As., France. Ruby-throated Warbler, Bree, 2.

111. S. luscinia, Lath. E. Nightingale, Yar., 1, Mor., 3.

112. S. philomela, Bechst. Major, Bp. SE. Thrush Nightingale, Bree, 2.

113. S. galactodes, Tem. S. W. Rufous Sedge Warbler, Yar., 1, Mor., 3. Var. S. familiaris, Menet. S. E.

114. S. rubecula, L. E. Robin Redbreast, Yar., 1, Mor., 3.

Division 3.—Philacanthæ. Mühle.

115. S. nisoria, Bechst. C. E. Barred Warbler, Bree, 2.

116. S. orphea, Tem. S. W. Orpheus Warbler, Yar., Supp. No. 2.

117. S. atricapilla, Lath. C. S. Blackcap Warbler, Yar., 1, Mor., 3.

118. S. hortensis, Lath. E. Garden Warbler, Yar., 1, Mor., 3.

119. S. cinerea, Lath. E. Common Whitethroat, Yar., 1, Mor., 3.

120. S. curruca, Lath. C. S. Lesser Whitethroat, Yar., 1, Mor., 3.

Division 4.—Dumelicolæ. Mühle.

121. S. ruppellii, Tem. S. E. Ruppell's Warbler, Bree, 2.

122. S. sub-alpina, Bonelli, S. Subalpine Warbler, Bree, 2.

123. S. melanocephala, Gm. S. Sardinian Warbler, Bree, 2.

124. S. conspicillata, Marm. S. Spectacled Warbler, Bree, 2.

125. S. provincialis, Gm. S. W. Dartford Warbler, Yar., 1, Mor., 3.

126. S. sarda, Marm. Provincialis, var., Blasius. Sardinia. Marmora's Warbler, Bree, 2.

Division 5.—Phyllopseuste. Mühle.

127. S. sibilatrix, Bechst. Sylvicola, Lath. C. S. Wood Warbler, Yar., 1, Mor., 3.

128. S. trochilus, Lath. E. Willow Wren, Yar., 1, Mor., 3. Var. eversmanni, Bp. C. E.

129. S. rufa, Lath. E. Chiff-Chaff, Yar., 1, Mor., 3.

130. S. bonelli, Vieill. C. S. Bonelli's Warbler, Bree, 2.

131. S. olivetorum, Strickland. S. Olive-tree Warbler, Bree, 2.

132. S. elaica, Lind. S. ambigua, Schleg. S. Olivaceous Warbler, Bree, 2.

133. (?) S. cinerascens, De Selys. Arigonis, Brehm. S. W.

134. S. hippolais, Mühle. E. Melodious Willow Wren, Yar., Suppl., No. 2.

135. S. icterina, Vieill. Polyglotta, De Selys. S. Vieillot's Willow Warbler, Bree, 2.

Division 7.—Calamodytæ. Mühle.

136. S. palustris, Bechst. C. S. Marsh Warbler, Bree, 3.

137. S. arundinacea, Lath. C. S. Reed Warbler, Yar., 1, Mor., 3. Var. S. horticola, Naum. C. S.

138. S. turdoides, Meyer. C. S. Thrush-like Warbler, Yar., Suppt. No. 2.

139. S. scita, Eversm. Salicaria, Pall. Caligata, Licht. E. SE. Booted Reed Warbler, Bree, 2.

140. S. phragmitis, Bechst. Schœnobaenus, L. E. Sedge Warbler, Yar., 1, Mor., 3.

141. S. aquatica, Lath. C. S. Aquatic Warbler, Bree, 2.

142. S. melanopogen, Tem. S. E. Moustached Warbler, Bree, 2.

143. S. cisticola, Tem. S. W. Fantail Warbler, Bree, 2.

144. S. cetti, Marm. S. Cetti's Warbler, Bree, 2.

145. S. luscinoides, Savi. S. Savi's Warbler, Yar., 1, Mor., 3.

146. S. fluviatilis, Meyer et Wolff. S. E. River Warbler, Bree, 2.

147. S. locustella, Penn. C. S. Grasshopper Warbler, Yar., 1, Mor., 3.

148. (*a*) S. certhiola, Tem. N. A. Heligoland. Pallas's Locustelle, Bree, 2.

Genus 19.—*Regulus*. Ray.

149. R. cristatus, Koch. C. S. Gold-crested Ringlet, Yar., 1, Mor., 3.

150. R. ignicapillus, Licht. C. S. Fire-crested Wren, Yar., 1, Mor., 3.

151. (*a*) R. calendula, Licht. N Am., England. (Bis captus in Britannia.) Ruby-crowned Ringlet, Bree, 2.

Genus 20.—*Troglodytes*. Cuv.

152. T. europæus, Cuv. E. Wren, Yar., 1, Mor., 3.

Genus 21.—*Accentor*. Bechst.

153. A. modularis, Cuv. E. Hedge Accentor, Yar., 1, Mor., 3.

154. A. alpinus, Bechst. S. Alpine Accentor, Yar., 1, Mor., 3.

155. (*a*) A. montanellus, Tem. N As., EE. Mountain Accentor, Bree, 2.

Family XI.—SAXICOLIDÆ.

Genus 22.—*Saxicola*. Bechst.

156. S. ænanthe, Bechst. E. Wheatear, Yar., 1, Mor., 3.

157. S. saltator, Men. S. ænanthe, var., Blasius. Menetries' Wheatear, Bree, 2.

158. S. stapazina, Tem. S. Russet Wheatear, Bree, 2.

159. S. aurita, Tem. Rufescens, Briss. S. W. Black-eared Wheatear, Bree, 2.

160. S. leucomela, Tem. SE. Pied Wheatear, Bree, 2. Var. lugens, Licht. Afr., SE.

161. S. leucura, Licht. S. Black Wheatear, Bree, 2.

162. S. rubetra, Bechst. E. Whinchat, Yar., 1, Mor., 3.

163. S. rubicola, Bechst. C. S. Stonechat, Yar., 1, Mor., 3.

Family XII.—MOTACILLIDÆ.

Genus 23.—*Motacilla*. L.

164. M. alba, L. E. White Wagtail, Yar., 1, Mor., 2. Var. M. lugubris, Tem. N As., EE. Sombre Wagtail, Bree, 2.

165. M. yarrellii, Gould. Var. alba, Bs. C. N. W. Pied Wagtail, Yar., 1, Mor., 2.

166. M. boarula, L. sulphurea, Bechst. C. S. Grey Wagtail, Yar., 1, Mor., 2.

167. M. flava, L. E. Grey-headed Wagtail, Yar., 1, Mor. 2. Var. cinereo-capilla, Savi. C. S. Grey-headed Yellow Wagtail, Bree, 2. Var. melanocephala, Bp. S. E. Black-headed Yellow Wagtail, Bree, 2.

168. M. rayi, Gould. Flaveola, Tem. C. W. Ray's Wagtail. Var. campestris, Pall. E.

169. M. citreola, Pall. E. Yellow-headed Wagtail, Bree, 2.

Genus 24.—*Anthus*. Bechst.

170. A. obscurus, Keys. et Bs. Var. spinoletta, Bs. Aquaticus, Gould. S. Rock Pipit, Yar., 1, Mor., 2.

171. A. spinoletta, L. aquaticus, Bechst. Var. rupestris, Nilsson. C. S. N. Water Pipit, Bree, 2.

172. (*a*) A. ludovicianus, Bp. N Am., England, Heligoland. Pennsylvanian Pipit, Bree, 2.

173. A. pratensis, Bechst. E. Meadow Pipit, Yar., 1, Mor., 2.

174. (*a*) A. cervinus, Pall. Var. pratensis, Bs. NE. Red-throated Pipit, Bree, 2.

175. A. arboreus, Bechst. E. Tree Pipit, Yar., 1, Mor., 2.

176. A. rufescens, Tem. Campestris, Bechst. C. S. Tawny Pipit, Bree, 2.

177. A. richardi, Vieill. S. C. Richard's Pipit, Yar., 1, Mor., 2.

Order IV.—GRANIVORÆ.

Family XIII.—ALAUDIDÆ.

Genus 25.—*Alauda*. L.

Section 1.—Larks with arched beaks.

Genus—*Certhilauda*. Swn.

178. A. bifasciata, Licht. Desertorum, Stanley. SE. Bifasciated Lark.

179. (*a*) A. duponti, Vieill. Afr., France. Dupont's Lark.

Section 2.—Larks properly so called.

180. A. arvensis, L. cantarella, Bp. E. Skylark, Yar., 1, Mor., 2.

181. A. cristata, L. C. S. Crested Lark, Yar., 1, Mor., 2. Var. theclæ, Br. S. W.

182. A. arborea, L. E. Wood Lark, Yar., 1, Mor., 2.

183. A. brachydactyla, Leisler. Kollyi, Tem. S. Short-toed Lark, Yar., 1, Mor., 2.

184. A. isabellina, Tem. A. deserta, Licht. Desert Lark, Bree, 2.

185. (?) A. pispoletta, Pall. EE.

186. A. alpestris, L. N. Shore Lark, Yar., 1, Mor., 2. [Var. *nivalis*, Pall. E. ? Var. *penicillata*, *Gould.—Blasius.*]

Section 3.—Larks with thick beaks.

187. A. tartarica, Pall. E. SE. Black Lark, Bree, 2.

188. A. calandra, L. S. Calandra Lark, Bree, 2.

189. A. sibirica, Gm. Leucoptera, Pall. E. Siberian Lark, Bree, 2.

FAMILY XIV.—PARIDÆ.

Genus 26.—*Parus*. L.

190. P. major, L. E. Great Tit, Yar., 1, Mor., 1.

191. P. cæruleus, L. E. Blue Tit, Yar., 1, Mor., 1. Var. ultramarinus, Bp. Afr.

192. P. ater, L. E. Cole Tit, Yar., 1, Mor., 1.

193. P. palustris, L. E. Marsh Tit, Yar., 1, Mor., 1.

194. P. borealis, De Selys. N. Var. alpestris, Baill. C. S. Var. palustris, Bs. Northern Tit, Bree, 4, App.

195. P. cristatus, L. E. Crested Tit, Yar., 1, Mor., 1.

196. P. lugubris, Natt. SE. Sombre Tit, Bree, 3.

197. P. sibiricus, Gm. NE. Siberian Tit, Bree, 3.

198. P. cyaneus, Pall. E. C. Azure Tit, Bree, 3.

199. P. caudatus, L. E. Long-tailed Tit, Yar., 1, Mor., 1.

200. P. pendulinus, L. SE. Penduline Tit, Bree, 3.

Sub-genus—*Panurus*. Koch.
(*Calamophilus*. Leach.)

201. P. biarmicus, L. Barbatus, Bs. C. S. Bearded Tit, Yar., 1, Mor., 1.

FAMILY XV.—FRINGILLIDÆ.

Genus 27.—*Emberiza*, L.

202. E. melanocephala, Scopoli. Dolichonyx, Bp. SE. Black-headed Bunting, Bree, 3.

203. E. citrinella, L. E. Yellow Bunting, Yar., 1, Mor., 2.

204. E. miliaria, L. C. S. Common Bunting, Yar., 1, Mor., 2.

205. E. schœniculus, L. Provincialis, Bp. E. Reed Bunting, Yar., 1, Mor., 2. Var. pyrrhuloides, Pall. SE.

206. E. palustris, Savi. Var. schœniculus, Bs. S. Marsh Bunting, Bree, 3.

207. (*a*) E. pityornis, Pall. N As. EE. Pine Bunting, Bree, 3.

208. E. hortulana, L. C. S. Ortolan Bunting, Yar., 1, Mor., 2.

209. E. cæsia, Cretzschm. S. Cretzschmaër's Bunting, Bree, 3.

210. (*a*) E. striolata, Rüp. Spain. Striolated Bunting, Bree, 3.

211. E. cirlus, L. S. Cirl Bunting, Yar., 1, Mor., 2.

212. E. cia, L. S. Meadow Bunting, Bree, 3.

213. E. rustica, Pall. NE. Rustic Bunting, 3.

214. E. aureola, Pall. NE. Yellow-breasted Bunting, Bree, 3.

215. E. pusilla, Pall. Lesbia, Gm. NE. Little Bunting, Bree, 3.

Sub-genus—*Plectrophanes*. Meyer.

216. E. nivalis, L. N. Snow Bunting, Yar., 1, Mor., 2.

217. E. calcarata, Tem. N. Lapland Bunting, Yar., 1, Mor., 2.

Genus 28.—*Loxia*. L.

218. L. pytiopsittacus, Bechst. N. C. Parrot Crossbill, Yar., 2, Mor., 2.

219. L. curvirostris, L. E. Common Crossbill, Yar., 2, Mor., 2. Var. Americana, Wilson. N Am.

220. (*a*) L. leucoptera, Gm. N Am., England. White-winged Crossbill, Yar., 2, Mor., 2.

Genus 29.—*Pyrrhula*. Briss.

221. P. enucleator, L. N. Pine Bullfinch, Yar., 1, Mor., 2.

222. (*a*) P. rosea, Tem. SE., Heligoland. Rosy Bullfinch, Bree, 3.

223. P. erythrina, Tem. CE. Scarlet Bullfinch, Bree, 3.

224. (*a*) P. gigathinea, Licht. S. Desert Trumpeter Bullfinch, Bree, 3.

225. P. vulgaris, Tem. Rubicilla, Pall. E. Common Bullfinch, Yar., 1, Mor., 2.

226. P. caucasica, Pall. E. SE. Caucasian Bullfinch, Bree, 3, p. 92.

Genus 30.—*Fringilla*. L.

227. F. coccothraustes, Tem. E. Hawfinch, Yar., 1, Mor., 2.

228. F. coccothraustes phænicoptera. EE. Crimson-winged Grosbeak, Bree, 3.

229. F. serinus, L. S. Serin Finch, Bree, 3.

230. F. pusilla, Pall. EE. Alpine Serin Finch, Bree, 3.

231. F. spinus, L. E. Siskin, Yar., 1, Mor., 2.

232. F. carduelis, L. E. Goldfinch, Yar., 1, Mor., 2.

233. F. citrinella, L. S. Citril Finch, Bree, 3.

234. F. chloris, L. E. Greenfinch, Yar., 1, Mor., 2.

235. F. cœlebs, L. E. Chaffinch, Yar., 1, Mor., 2. Var. spodiogena, Bp. Afr.

236. F. montifringilla, L. N. Brambling, Yar., 1, Mor., 2.

237. F. nivalis, Briss. Eur. Alp. Cauc. Snow Finch, Bree, 3. Var. alpicola, Pall. E. SE.

238. F. cannabina, L. E. Common Linnet, Yar., 1, Mor., 2.

239. F. montium, Gm. N. Mountain Linnet, Yar., 1, Mor., 2.

240. F. linaria, Tem. N. Lesser Redpole, Yar., 1, Mor., 2.

241. F. canescens, Selys. N. Mealy Redpole, Yar., 1, Mor., 2.

242. (*a*) F. holboelli, Br. Canescens, Gould. N. Holboll's Redpole, Bree, 3.

Genus 31.—*Passer*. Briss.

243. P. petronia, L. S. Rock Sparrow, Bree, 3.

244. P. domesticus, L. E. House Sparrow, Yar., 1, Mor., 2.

245. P. domesticus cisalpinus, Schl. S. Var. domesticus, Bs. Italian House Sparrow, Bree, 3.

246. P. salicarius, Vieill. S. Spanish Sparrow, Bree, 3.

247. P. montanus, L. E. Tree Sparrow, Yar., 1, Mor. 2.

Order V.—ZYGODACTYLI.

Family XVI.—CUCULIDÆ.

Genus 32.—*Cuculus*. L.

248. C. canorus, L. E. Common Cuckoo, Yar., 2, Mor., 2.

249. C. glandarius, L. S. Great Spotted Cuckoo, Yar., 2, Mor., 2.

Family XVII.—PICIDÆ.

Genus 33.—*Picus*. L.

250. P. martius, L. C. N. Black Woodpecker, Yar., 2, Mor., 2.

251. P. viridis, L. E. Green Woodpecker, Yar., 2, Mor., 2.

252. P. canus, Gm. C. E. N. Grey-headed Green Woodpecker, Bree, 3.

253. P. leuconotus, Meyer. N. E. White-rumped Woodpecker, Bree, 3.

254. P. major, L. E. Greater Spotted Woodpecker, Yar., 2, Mor., 2. Var. P. numidicus, Malherbe. S. W.

255. P. medius, L. E. Middle Spotted Woodpecker, Bree, 3.

256. P. minor, L. C. S. Lesser Spotted Woodpecker, Yar., 2, Mor., 2.

257. P. tridactylus, L. CE. Three-toed Woodpecker, Bree, 3.

Genus 34.—*Yunx*. L.

258. Y. torquilla, L. C. S. Wryneck, Yar., 2, Mor., 2.

Order VI.—ANISODACTYLI.

Family XVIII.—CERTHIIDÆ.

Genus 35.—*Sitta*.

259. S. europea, L. E. Nuthatch, Yar., 2, Mor., 1. Var. S. cæsia, Meyer. C. S.

260. S. sibirica, Pall. E. Asiatic Nuthatch, Bree, 3.

261. S. syriaca, Ehrenberg. SE. Dalmatian Nuthatch, Bree, 3.

Genus 36.—*Certhia*. L.

262. C. familiaris, L. E. Common Creeper, Yar., 2, Mor., 2. Var. brachydactyla, Br. E.

Genus 37.—*Tichodroma*. Ill.

263. T. muraria, Ill. S. C. Wall Creeper, Bree, 3.

Family XIX.—UPUPIDÆ.

Genus 38.—*Upupa*. L.

264. U. epops, L. C. S. Hoopoe, Yar., 2, Mor. 1.

Order VII.—ALCYONES.

Family XX.—MEROPIDÆ.

Genus 39.—*Merops*. L.

265. M. apiaster, L. S. Common Bee-eater, Yar., 2, Mor., 1.

266. M. persica, Pall. E. SE. Blue-cheeked Bee-eater, Bree, 3.

Family XXI.—ALCEDINIDÆ.

Genus 40.—*Alcedo*. L.

267. A. ispida, L. C. S. Kingfisher, Yar., 2, Mor., 1.

268. A. rudis, L. SE. Black-and-White Kingfisher, Bree, 3.

269. A. smyrnensis, L. As. Min., Turkish Islands. Smyrna Kingfisher, Bree, 4, App.

Family XXII.—CORACIIDÆ.

Genus 41.—*Coracias*. L.

270. C. garrula, L. C. S. Roller, Yar., 2, Mor., 1.

Order VIII.—CHELIDONES.

Family XXIII.—HIRUNDINIDÆ.

Genus 42.—*Hirundo.* L.

271. H. rustica, L. E. Swallow, Yar., 2, Mor., 2.

272. H. daurica, L. Alpestris, Bs. N., E As. Rufous Swallow, Bree, 3.

273. H. urbica, L. E. Martin, Yar., 2, Mor., 2.

274. H. riparia, L. E. Sand Martin, Yar., 2, Mor., 2.

275. H. rupestris, Scop. S. Crag Swallow, Bree, 3.

Genus 43.—*Cypselus.* Ill.

276. C. melba, L. Alpinus, Tem. S. W. Alpine Swift, Yar., 2, Mor., 2.

277. C. apus, L. E. Common Swift, Yar., 2, Mor., 2.

Family XXIV.—CAPRIMULGIDÆ.

Genus 44.—*Caprimulgus.*

278. C. europeus, L. E. Goatsucker, or Nightjar, Yar., 2, Mor., 2.

279. C. ruficollis, Tem. S. W. Russet-necked Nightjar, Bree, 3.

Order IX.—COLUMBÆ.

Family XXV.—COLUMBIDÆ.

Genus 45.—*Columba.*

280. C. palumbus, L. E. Ringdove, Yar., 2, Mor., 3.

281. C. œnas, L. C. S. Stock Dove, Yar., 2, Mor., 3.

282. C. livia, L. S. C. Rock Dove, Yar., 2, Mor., 3.

283. C. turtur, L. C. S. Turtle Dove, Yar., 2, Mor., 3. Var. rupicola, Tem.

284. C. ægyptiaca, Lath. Senegalensis, L. SE. Egyptian Turtle Dove, Bree, 3.

Division II.—AUTOPHAGI.

(The young of which can more or less feed themselves from birth.)

Order X.—GALLINÆ.

Family XXVI.—PHASIANIDÆ.

Genus 46.—*Phasianus.*

285. P. colchicus, L. E. Common Pheasant, Yar., 2, Mor., 3.

Family XXVII.—Tetraonidæ.

Genus 47.—*Tetrao.* L.

286. T. urogallus, L. E. Capercaillie, Yar., 2, Mor., 3.

287. T. tetrix, L. E. Black Grouse, Yar., 2, Mor., 3.

288. T. bonasia, L. E. Hazel Grouse, Bree, 3.

289. T. albus, Gm. NE. Willow Grouse, Bree, 3.

290. T. scoticus, Lath. Var. albus, Bs. Scotland. Red Grouse, Yar., 2, Mor., 3.

291. T. lagopus, L. Rupestris, Gm. E. Ptarmigan, Yar., 2, Mor., 3. Var. islandorum, Faber. Iceland. Var. reinhardti, Br. N. Am.

FAMILY XXVIII.—PTEROCLIDÆ.

Genus 48.—*Pterocles*. Tem.

292. P. alchata, Steph. S. Pin-tailed Sand Grouse, Bree, 3.

293. P. arenarius, Tem. S. Sand Grouse, Bree, 3.

FAMILY XXIX.—PERDICIDÆ.

Genus 49.—*Tetraogallus*, Gray.

294. T. caucasicus, Gray. ESE. Caucasian Snow Partridge, Bree, 3.

Genus 50.—*Perdix*. L.

295. P. francolinus, L. SE. Francolin, Bree, 3.

296. P. rubra, Briss. S. W. Red-legged Partridge, Yar., 2, Mor., 3.

297. P. græca, Briss. SE. Greek Partridge, Bree, 3. Var. saxatilis, Meyer. S.

298. P. petrosa, Lath. S. Barbary Partridge, Yar., 2, Mor., 3.

299. P. cinerea, Briss. C. S. Common or Grey Partridge, Yar., 2, Mor., 3.

300. P. coturnix, Lath. C. S. Common Quail, Yar., 2, Mor., 3.

Genus 51.—*Hemipodius*, Tem.

301. H. tachydromus, Tem. SE. Andalusian Hemipode, Yar., 2, Mor., 3.

ORDER XI.—ALECTORIDES.

FAMILY XXX.—GLAREOLIDÆ.

Genus 52.—*Glareola*. L.

302. G. pratincola, L. SE. Collared Pratincole, Yar., 2, Mor., 3. Var. pallasii, Bruch. Var. melanoptera, Nord. SE.

ORDER XII.—CURSORES.

FAMILY XXXI.—OTIDIDÆ.

Genus 53.—*Otis*. L.

303. O. tarda, L. C. S. Great Bustard, Yar., 2, Mor., 3.

304. O. tetrix, L. C. E. Little Bustard, Yar., 2, Mor., 3.

305. (*a*) O. houbara, Gm. Af, S. W. Ruffed Bustard, Bree, 4.

306. (*a*) O. macqueenii, Gray. As., Germany, Britain. Var. houbara, Bs. Macqueen's Bustard, Yar., 3, Suppt.

ORDER XIII.—GRALLATORES.

FAMILY XXXII.—CHARADRIIDÆ.

Genus 54.—*Cursorius*.

307. C. europeus, Lath. S. Cream-coloured Courser, Yar., 2.

Genus 55.—*Œdicnemus*. Tem.

308. Œ. crepitans, Tem. C. S. Thick-knee, Yar., 2, Mor., 4.

Genus 56.—*Charadrius*. L.

309. C. pluvialis, L. NE. Golden Plover, Yar., 2, Mor., 4. Var. virginicus, Bp. N. A., Heligoland. Var. longipes, Tem. As., Malta, Heligoland.

310. C. morinellus, L. F. Dotterel, Yar., 2, Mor., 4.

311. (*a*) C. asiaticus & caspius, Pall. E. SE. Asiatic Plover, Bree, 4, p. 18.

312. (*a*) C. pyrrhothorax, Tem. N As., Russia. Red-breasted Dotterel, Bree, 4, p. 18.

313. C. cantianus, Lath. C. W. Kentish Plover, Yar., 2, Mor., 4.

314. C. hiaticula, L. C. N. Ringed Plover, Yar., 2, Mor., 4.

315. C. minor, Meyer. Fluviatilis, Bechst. C. S. Little Ringed Plover, Yar., 2, Mor., 4.

316. C. spinosus, L. SE. Spur-winged Plover, Bree, 4.

317. C. melanocephalus, Gm. Hyas ægyptiacus, Gloger. Af., France, Black-headed Plover, Bree, 4.

Genus 57.—*Vanellus*. L.

318. V. cristatus, Meyer. E. Lapwing, Yar., 2, Mor., 4.

319. V. gregarius, Vieill. E. SE. Social Plover, Bree, 4.

320. V. squatarola, L. NE. Grey Plover, Yar., 2, Mor., 4.

Genus 58.—*Himantopus*. Briss.

321. H. melanopterus, Meyer. S. Black-winged Stilt, Yar., 2, Mor., 4.

Family XXXIII.—HÆMATOPODIDÆ.

Genus 59.—*Hæmatopus*.

322. H. ostralegus, L. E. Oystercatcher, Yar., 2, Mor. 4.

Genus 60.—*Strepsilas*. Ill.

323. S. collaris, Tem. N. Turnstone, Yar., 2, Mor., 4.

Family XXXIV.—GRUIDÆ.

Genus 61.—*Grus*. Pall.

324. G. cinerea, Bechst. N. C. Common Crane, Yar., 2, Mor., 4.

325. G. leucogeranus, Pall. E. SE. Siberian Crane, Bree, 4.

326. G. virgo, Pall. SE. Numidian Crane, Bree, 4.

327. (?) G. pavonina, Briss. S Af. Balearic Crane, Bree, 4.

Family XXXV.—ARDEIDÆ.

Genus 62.—*Ciconia*. L.

328. C. alba, Briss. S. W. White Stork, Yar., 2, Mor., 4.

329. C. nigra, L. C. S. Black Stork, Yar., 2, Mor., 4,

Genus 63.—*Ardea*. L.

330. A. cinerea, L. C. S. Common Heron, Yar., 2, Mor., 4.

331. A. purpurea, L. SE. Purple Heron, Yar., 2, Mor., 4.

332. A. alba, L. Nigrirostris, Bp. SE. Great White Heron, Yar., 2, Mor., 4.

333. A. garzetta, L. SE. Little Egret, Yar., 2.

334. (*a*) A. bubulcus, L. N Af., Greece, England. Buff-backed Heron, Yar., 2, Mor., 1.

335. A. comatus, Pall. Ralloides, Scop. SE. Squacco Heron, Yar., 2, Mor., 4.

Genus 64.—*Nycticorax*. Cuv.

336. N. gardenii, Jardine. SE. Night Heron, Yar., 2, Mor., 4.

Genus 65.—*Botaurus*. Briss.

337. B. stellaris, L. C. S. Bittern, Yar., 2, Mor., 4.

338. B. minutus, L. C. S. Little Bittern, Yar., 2, Mor., 4.

Genus 66.—*Phœnicopterus*. L.

339. P. antiquorum, Tem. S. Rosy Flamingo, Bree, 4. Var. erythraeus, Verr. S.

Genus 67.—*Platalea*. L.

340. P. leucorodia, L. S. C. W. Spoonbill, Yar., 2, Mor., 4.

Genus 68.—*Ibis*. Cuv.

341. I. falcinellus, L. SE. Glossy Ibis, Yar., 2, Mor., 4.

FAMILY XXXVI.—SCOLOPACIDÆ.

Genus 69.—*Recurvirostra*. L.

342. R. avocetta, L. S. Avocet, Yar., 2, Mor., 4.

Genus 70.—*Numenius*. Gesner.

343. N. arcuata, L. N. C. Curlew, Yar., 2, Mor., 4.

344. N. phœopus, L. N. C. Whimbrel, Yar., 2, Mor., 4.

345. N. tenuirostris, Vieill. S. Slender-billed Curlew, Bree, 4.

Genus 71.—*Tringa*. L.

346. T. canutus, L. N. W. Knot, Yar., 3, Mor., 4.

347. T. maritima, Brünn. N. W. Purple Sandpiper, Yar., 3, Mor., 4.

348. T. subarquata, Tem. N. Curlew Sandpiper, Yar., 3, Mor., 4.

349. T. cinclus, L. N. C. Dunlin, Yar., 3, Mor., 4.

350. T. minuta, Leisler. N. Little Stint, Yar., 3, Mor., 4.

351. T. temminckii, Leisler. T. pusilla, L. N. E. Temminck's Stint, Yar., 3, Mor., 4.

352. T. platyrhyncha, Tem. Pygmæa, Lath. N. Broad-billed Sandpiper, Yar., 3, Mor., 4.

353. T. arenaria, L. N. Sanderling, Yar., 3, Mor., 4.

Genus 72.—*Machetes*. Cuv.

354. M. pugnax, L. E. Ruff, Yar., 1, Mor., 4.

Genus 73.—*Actitis*. Boie.

355. A. hypoleucus, L. E. Common Sandpiper, Yar., 2, Mor., 4.

Genus 74.—*Totanus*. Tem.

356. T. fuscus, Leisler. NE. Spotted Redshank, Yar., 2, Mor., 4.

357. T. glottis, Bechst. NE. Greenshank, Yar., 2, Mor., 4.

358. T. stagnatilis, Bechst. SE. Marsh Sandpiper, Bree, 4.

359. T. calidris, L. E. Common Redshank, Yar., 2, Mor., 4.

360. T glareola, L. N. Wood Sandpiper, Yar., 2, Mor., 4.

361. T. ochropus, L. C. N. Green Sandpiper, Yar., 2, Mor., 4.

Genus 75.—*Limosa*. Briss.

362. L. melanura, Tem. Ægocephala, L. E. Black-tailed Godwit, Yar., 2, Mor., 4.

363. L. rufa, Briss. NE. Bar-tailed Godwit, Yar., 2, Mor., 4.

364. L. terek, Tem. Cinereus, Gm. NE. Terek Godwit, Bree, 4.

Genus 76.—*Scolopax*. L.

365. S. rusticola, L. E. Woodcock, Yar., 3, Mor,, 4.

366. S. major, Gm. C. N. Great Snipe, Yar., 3, Mor., 4.

367. S. gallinago, L. C. N. Common Snipe, Yar., 3, Mor., 4. Var. S. sabinii, Leach. England. Yar., 3.

368. S. gallinula, L. N. C. Jack Snipe, Yar., 3, Mor., 4.

FAMILY XXXVII.—RALLIDÆ.

Genus 77.—*Rallus*. L.

369. R. aquaticus, L. C. S. Water Rail, Yar., 3, Mor., 5.

370. R. crex, L. E. Land Rail, Yar., 3, Mor., 5.

371. R. porzana, L. E. Spotted Crake, Yar., 3, Mor., 5.

372. R. pusillus, Gm. Minuta, Pall. S. E. C. Little Crake.

373. R. Baillonii, Tem. Pygmea, Naum. Baillon's Crake. S. W. C.

Genus 78.—*Gallinula*. Briss.

374. G. chloropus, L. C. S. Moorhen, Yar., 3, Mor., 5.

Genus 79.—*Porphyrio*. Briss.

375. P. hyacinthinus, Tem. Veterum, Auct. Violet Gallinule, Bree, 4.

Genus 80.—*Fulica*. L.

376. F. atra, L. C. S. Common Coot, Yar., 3, Mor., 5.

377. P. cristata, Gm. S. W. Crested Coot, Bree, 4.

Order XIV.—PINNATIPEDES.

Family XXXVIII.—PHALAROPIDÆ.

Genus 81.—*Phalaropus.* Briss.

378. P. cinereus, Briss. N. Red-necked Phalarope, Yar., 3, Mor., 5.

379. P. rufescens, Briss. N. Grey Phalarope, Yar., 3, Mor., 5.

Family XXXIX.—PODICIPIDÆ.

Genus 82.—*Podiceps.* Lath.

380. P. cristatus, L. C. S. Great Crested Grebe, Yar., 3, Mor., 5.

381. P. rubicollis, Lath. C. S. Red-necked Grebe, Yar., 3, Mor., 5. Var. holbolli, Bp. Major, Schleg. N Am., Holland.

382. P. auritus, L. Arctitus, Boie. Cornutus, Tem. N. Eared Grebe, Yar., 3, Mor., 5.

383. P. minor, Lath. C. S. Little Grebe, Yar., 3, Mor., 5.

384. P. nigricollis, Br. Recurvirostris, Briss. Auritus, Tem. S. C. Black-necked Grebe, Gould.

Order XV.—PALMIPEDES.

Family XL.—LARIDÆ.

Genus 83.—*Sterna.* L.

385. S. caspia, Pall. C. SE. Caspian Tern, Yar., 3, Mor., 6.

386. S. cantiaca, Gm. C. Sandwich Tern, Yar., 3, Mor., 6.

387. (*a*) S. affinis, Rüp. Afr., Greece. Allied Tern, Bree, 4.

388. S. hirundo, L. Fluviatilis, Bs. E. Common Tern, Yar., 3, Mor., 6.

389. S. macrura, Naum. Arctica, Tem. Hirundo, Bs. N. Arctic Tern, Yar., 3, Mor., 6.

390. S. minuta, L. C. S. Lesser Tern, Yar., 3, Mor., 6.

391. S. anglica, Montagu. S. Gull-billed Tern, Yar., 3, Mor., 6.

392. S. douglassi, Mont. Dougalli, Tem. Roseate Tern, Yar., 3, Mor., 6.

393. S. nigra, Briss. S. fissipes, L. Black Tern, Yar., 3, Mor., 6.

394. S. leucoptera, Tem. S. nigra, L. S. White-winged Black Tern, Yar., 3, Mor., 6.

395. S. hybrida, Pall. Leucoparcia, Natt. S. Whiskered Tern, Yar., 3, Mor., 6.

396. (*a*) S. stolidus, L. England, France, (Tropics.) Noddy Tern, Yar., 3, Mor., 6.

Genus 84.—*Larus.* L.

397. L. marinus, L. N. C. Great Black-backed Gull, Yar., 3, Mor., 6.

398. L. fuscus, L. N. C. Lesser Black-backed Gull, Yar., 3, Mor., 6. Var. fuscescens, Licht.

399. L. argentatus, Brun. N. Herring Gull, Yar., 3, Mor., 6.

400. L. glaucus, Brun. N. Glaucous Gull, Yar., 3, Mor., 6.

401. L. leucopterus, Faber. N. Iceland Gull, Yar., 3, Mor., 6.

402. L. canus, L. N. C. Common Gull, Yar., 3, Mor., 6.

403. L. audouini, Payraudeau. S. Audouin's Gull, Bree, 4.

404. L. eburneus, Gm. N. Ivory Gull, Yar., 3, Mor., 6.

405. L. tridactylus, L. N. Kittywake, Yar., 3, Mor., 6.

406. (*a*) L. leucopthalmos, Licht. Greece, Red Sea. White-eyed Gull, Bree, 4.

407. L. ridibundus, L. C. S. Black-headed Gull, Yar., 3, Mor., 6. Var. L. capistratus, Tem. Masked Gull, Yar., 3, Mor., 6.

408. L. tenuirostris, Tem. Gelastes, Licht. S. Slender-billed Gull.

409. L. melanocephalus, Natt. SE. Adriatic Gull, Bree, 4.

410. L. minutus, Pall. SE. C. Little Gull, Yar., 3, Mor., 6.

411. L. ichthyaëtos, Pall. SE. E. Great Black-headed Gull, Bree, 4.

412. (*a*) L. sabinii, Leach. N As., N Am., Germany, Heligoland, England. Sabine's Gull, Yar., 3, Mor., 6.

Genus 85.—*Lestris*. Ill.

413. L. catarrhactes, L. N. Common Skua, Yar., 3, Mor., 6.

414. L. pomarina, Tem. N. Pomarine Skua, Yar., 3, Mor., 6.

415. L. richardsonii, Swn. N. Richardson's Skua, Yar., 3, Mor., 6.

416. L. buffoni, Boie. N. Buffon's Skua, Yar., 3, Mor., 6.

Genus 86.—*Procellaria*. L.

417. P. glacialis, L. N. Fulmar Petrel, Yar., 3, Mor., 6.

Genus 87.—*Puffinus*. Briss.

418. P. cinereus, Cuv. Kuhlii, Bs. S. C. Algerian Cinereous Shearwater, Bree, 4.

419. P. major, Faber. N. Arctic Cinereous Shearwater, Bree, 4.

420. (*a*) P. fuliginosus, Strickland. N Am., England, France. American Cinereous Shearwater, Yar., 3, 2nd. ed., p. 624.

421. P. anglorum, Ray. Arcticus, Faber. E. Manx Shearwater, Yar., 3, Mor., 6.

422. P. obscurus, Gm. Anglorum, Bs. E. Dusky Petrel, Yar., 3, Suppt., Mor., 6.

Genus 88.—*Thalassidroma*. Vigors.

423. T. pelagica, L. N. W. Storm Petrel, Yar., 3, Mor., 6.

424. T. leachii, Tem. N. W. Fork-tailed Petrel, Yar., 3, Mor., 6.

Family XLI.—ANATIDÆ.

Genus 89.—*Cygnus*. L.

425. C. olor, Gm. N. C. Mute Swan, Yar., 3, Mor., 5. Var. C. olor immutabilis, Schleg. Polish Swan, Yar., 3.

426. C. musicus, Bechst. N. Hooper, Yar., 3, Mor., 5. Var. minor, Pall. Var. bewickii, Yar.

Genus 90.—*Anser*.

427. A. cinereus, Meyer. C. N. Grey-lag Goose. Yar., 3, Mor., 5.

428. A. segetum, Bechst. N. Bean Goose, Yar., 3, Mor., 5. Var. arvensis, Brehm. N.

429. A. brachyrhynchus, Baillon. N. Var. segetum, Bs. Pink-footed Goose, Yar., 3, Mor., 5.

430. A. albifrons, Gm. N. White-fronted Goose, Yar., 3, Mor., 5.

431. A. erythropus, L. Temminckii, Boie. Minuta, Naum. Var. albifrons, Bs. N. Dwarf Goose, Bree, 4.

432. A. bernicla, Ill. Brenta, Pall. Leucopsis, Bp. N. Bernicle Goose, Yar., 3, Mor., 5.

433. A. brenta, Pall. N. Brent Goose, Yar., 3, Mor., 5.

434. (*a*) A. ruficollis, Pall. N As., Germany, France, England. Red-breasted Goose, Yar., 3, Mor., 5.

435. (*a*) A. ægyptiacus, Briss. N Af. Greece. Egyptian Goose, Yar., 3, Mor., 5.

Genus 91.—*Anas*. L.

Section 1.—*Natatores*.

436. A. boschus, L. C. N. Mallard, Yar., 3, Mor., 5.

437. A. crecca, L. C. S. Teal, Yar., 3, Mor., 5.

438. A. marmorata, Tem. Angustirostris, Men. S. Marbled Duck, Bree, 4.

439. (*a*) A. falcata, Pall. N As. Sweden, Hungary, Germany. Falcated Teal, Bree, 4.

440. A. querquedela, L. E. Garganey, Yar., 3, Mor., 5.

441. A. penelope, L. N. Wigeon, Yar., 3, Mor., 5.

442. A. strepera, L. C. S. Gadwall, Yar., 3, Mor., 5.

443. A. acuta, L. C. N. Pintail, Yar., 3, Mor., 5.

Sub-genus—*Rhynchaspis*. Leach.

444. A. clypeata, L. C. N. Shoveller, Yar., 3, Mor , 5.

Sub-genus—*Tardona*. Leach.

445. A. tardona, L. C. N. Common Shieldrake, Yar., 3, Mor., 5.

446. A. rutila, Pall. EE. Ruddy Shieldrake, Yar., 3, Mor., 5.

Section 2.—*Urinatores*.

Sub-genus—*Somateria*. Leach.

447. A. mollissima, L. N. Eider Duck, Yar., 3, Mor., 5.

448. A. spectabilis, L. N. King Duck, Yar., 3, Mor., 5.

449. A. stelleri, Pall. Dispar, Bs. N. E. Steller's Western Duck, Yar., 3, Mor., 5.

Sub-genus—*Oidemia*. Flem.

450. A. nigra, L. N. Common Scoter, Yar., 3, Mor., 5.

451. A. fusca, L. N. Velvet Scoter, Yar., 3, Mor., 5.

452. A. perspicillata, L. N. W. Surf Scoter.

Sub-genus—*Fuligula*. Steph.

453. A. glacialis, L. N. Long-tailed Duck, Yar., 3, Mor., 5.

454. A. mersa, Pall. SE. White-headed Duck, Bree, 4.

455. A. clangula, L. N. Golden-eye, Yar., 3, Mor., 5.

456. A. barrowii, Tem. Islandicum, Gm. N. W. Arctic Garrot, Bree, 4.

457. A. histrionica, L. N. W. Harlequin Duck, Yar., 3, Mor., 5.

458. A. fuligula, L. Cristata, Ray. N. Tufted Duck, Yar., 3, Mor., 5.

459. A. marila, L. N. Scaup Duck, Yar., 3, Mor., 5. Var. A. marilo-ides, Vig. N. A., England.

460. A. ferina, L. C. N. Pochard, Yar., 3, Mor., 5.

461. A. nyroca, Güldenstadt. N. C. White-eyed Duck, Yar., 3, Mor., 5.

462. A. rufina, Pall. SE. C. Red-crested Whistling Duck, Yar., 3, Mor., 5.

Genus 92—*Mergus*. L.

463. M. merganser, L. M. castor, L. N. C. Goosander, Yar., 3, Mor., 5.

464. M. serrator, L. N. C. Red-breasted Merganser.

465. (*a*) M. cucullatus, L. N. Am., England. Hooded Merganser, Yar., 3, Mor., 5.

466. M. albellus, L. N. E. Smew, Yar., 3, Mor., 5.

Family XLII.—PELECANIDÆ.

Genus 93—*Pelecanus*. L.

467. P. crispus, Bruch. E. SE. Dalmatian Pelican, Bree, 4.

468. P. onocratulus, L. SE. White Pelican, Bree, 4.

Genus 94—*Carbo*. Tem.

469. C. cormoranus, Meyer. C. N. Cormorant, Yar., 3, Mor., 5.

470. C. graculus, L. N. Shag, Yar., 3, Mor., 5. Var. C. desmaresti, Tem. S.

471. C. pygmæus, Tem. SO. Little Cormorant, Bree, 4.

Genus 95—*Sula*. Briss.

472. S. bassana, Briss. N. W. Gannet, Yar., 3, Mor., 5.

FAMILY XLIII.—COLYMBIDÆ.

Genus 96—*Colymbus*. L.

473. C. glacialis, L. N. W. Great Northern Diver, Yar., 3, Mor., 6.

474. C. arcticus, L. N. E. Black-throated Diver, Yar., 3, Mor., 6.

475. C. septentrionalis, L. N. W. Red-throated Diver.

FAMILY XLIV.—ALCIDÆ.

Genus 97.—*Uria*. Briss.

476. U. brunnichii, Sabine. Arra, Pall. Pica, Faber. N. Brunnich's Guillemot, Yar., 3, Mor., 6.

477. U. troile, Tem. Lomvia, Brun. N. Common Guillemot. Var. Hringvia, Brun. Lachrymans, Gould. Bridled Guillemot, Yar., 3. N.

478. U. grylle, Lath. Unicolor, Bewick. N. Black Guillemot, Yar., 3, Mor., 6. Var. mandtii, Licht. Spitzbergen.

Genus 98.—*Alca*. L.

479. A. impennis, L. (Extinct?) N. Great Auk, Yar., 3, Mor., 6.

480. A. torda, L. N. Razor-bill, Yar., 3, Mor., 6.

Genus 99.—*Mergulus*. Ray.

481. M. alle, Boie. N. Little Auk, Yar., 3, Mor., 6.

Genus 100.—*Mormon*. Ill.

482. M. arcticus, Ill. N. Puffin, Yar., 3, Mor., 6. Var. glacialis, Leach. Spitzbergen, Greenland.

ANALYSIS.

Doubtful either as to species or authority of occurrence	5
Accidental, though more or less frequent visitors	37
More or less permanent residents	440
	482

LIST II.

[The following list comprises those birds which have been observed occasionally in Europe, but which have no real claim to a permanent position in its avi-fauna. In this list there will be observed several birds figured by me in my work, and many others about which I have made observations under their several genera. Many naturalists consider that the occurrence of a bird even once entitles it to a place in the list; and I have therefore availed myself of the opportunity of figuring as many of such species as I could procure. But there are some birds, particularly those from America, whose appearance even several times in Europe does not entitle them to a place in its list: hence I have not hesitated to separate them altogether. I have made an exception in the case of *Regulus calendula* only, because I think there is a great probability of its being found again either in the Scotch Highlands or north of England.]

1. Falco leucocephalus. N Am. Bald Eagle, Bree, 1.
2. F. furcatus, L. N Am., England. Swallow-tailed Kite, Yar., 1, Mor., 1.
3. Strix asio, L. N Am., England. American Mottled Owl, Yar., 3, Suppt.
4. Agelaius phœniceus, L. N Am., England. Red-winged Starling, Yar., 2, Mor., 3.
5. Lanius phœnicurus, Pall. E As., Heligoland.
6. Turdus ruficollis, Pall. N As., Heligoland. Red-necked Thrush, Gould, B. of Asia.
7. T. whitei, Yar. Lunulatus, Lath. SE., As. In Orn. Suppt., Steph., Ed. Shaw, X, part i, p. 196. Eng., France. White's Thrush, Yar., 1, Mor., 3.
8. T. minor, Gm. N Am., Belgium, Italy. Hermit Thrush, Wilson, B. of Am.
9. T. sibiricus, Gm. Leucocillus, Pall., Bechst. N As., Germany. Siberian Thrush, Bree, 4, App.
10. T. solitarius, Wils. N Am., Germany. Solitary Thrush, Naum., Vog. Deut., xiii.
11. T. olivaceus, L. Afr., Lombardy. Olivaceous Thrush.
12. T. aurigaster, Vieill. Af., Iceland. Gold-vented Thrush, Yar., 1, Mor., 3.
13. Taxostoma rufum, L. N Am., Heligoland.
14. Mimus carolinensis, L. N Am., Heligoland.
15. Sylvia erythronotha, Eversm. As. Russia.
16. S. borealis, Bs. Eversmanni, Middendorff. NE., As.
17. S. virens, Lath. N Am., Heligoland. Black-throated Warbler, Bree, 2.
18. Regulus modestus, Gould. Superciliosa, Lath. N As., Heligoland, England. Dalmatian regulus, Yar., 1, Mor., 3.
19. Saxicola gutturalis, Licht. Salina, Evers. Af., As. Russia.

20. Emberiza chrysophrys, Pall. N As., Lille. Yellow-browed Bunting, Bree, 3.

21. (?) Carpodacus rhodopterus, Licht. As. Rev. Zool., 1857, p. 137.

22. (?) C. rhodochlamys, Brdt. As. Rev. Zool., 1857, p. 136.

23. Cuculus americanus, L. N Am., England. American Cuckoo, Yar., 2, Mor., 2.

24. C. erythrophthalmus, Wils. N Am., Lucca. Yellow-billed Cuckoo, Cabanis' Journ., 1858, p. 457.

25. Picus villosus, Lath. N Am., England. Hairy Woodpecker. Once captured by the Rev. O. P. Cambridge.

26. Alcedo alcyon, L. N Am., Ireland. Belted Kingfisher, Yar., 3, Suppt., Mor., 1.

27. Hirundo purpurea. N Am., Eng. American Purple Martin, Yar., 2, Mor., 2.

28. Hirundo caudacuta, Lath. Australia. Once captured near Colchester. Spine-tailed Swallow, Mor., 2, p. 86.

29. Columba gelastes, Tem. NE., As., Finland and Sweden. ? Var. C. turtur. Bree, 3, p. 197.

30. C. rupicola, Pall. As., Sweden and Finland.

31. C. migratoria, L. N Am., Eng. Passenger Pigeon, Yar., 2, Mor., 2.

32. Syrrhaptes paradoxus, Pall. As., Eng. Three-toed Sand Grouse, Ibis, vol. ii, Zool., 1859. Bree, 3, p. 230. Abundant in England in 1863, as accidental visitors.

33. Perdix virginiana, Degl. N Am., England. Virginian Colin, Yar., 2, Mor., 3.

34. Charadrius mongolicus, Pall. N As., Russia.

35. Grus antigone, Pall. SE. Bree, 4, p. 36.

36. Ardea atricollis, Wagler. Af., France. Black-necked Heron, Rev. Zool., 1854.

37. A. egrettoides, Gm. India, Sardinia. Lesser White Heron.

38. (?) A. gutturalis, Sw. Pyrenees. Vide Bonap. Rev. Zool., 1857, p. 136.

39. Botaurus minor, Bp. N Am., England. American Bittern, Yar., 2, Mor., 4.

40. Tantalus ibis, L. Af., S. Russia, Pall. Zoog., Schleg. Revue. African Ibis.

41. (?) Ibis religiosa, Cuv. Af., Greece (?) Sacred Ibis, Bree, 4.

42. Numenius borealis, Lath. N Am., Scotland. Esquimaux Curlew, Yar., 3, Suppl.

43. Tringa schinzii, Eyton. Melanotus, Vieill. N Am., England. Schinz Sandpiper, Yar., 3, Mor., 4.

44. T. pectoralis, Bp. Maculata, Vieill. N Am., England. Pectoral Sandpiper, Yar., 3, Mor., 4.

45. Wilsonii, Nuttal. Pusilla, Wilson, L. N Am., England. Little Peep, Yar., 3, Preface to Suppl.

46. Actites macularius, L. N Am., England, Germany. Spotted Sandpiper, Yar., 2, Mor., 4.

47. A. rufescens, Schleg. N Am., England, Heligoland. Buff-breasted Sandpiper, Yar., 3, Mor., 4.

48. Totanus bartramia, Tem. Longicaudus, Bechst. N Am., England, Germany. Bartram's Sandpiper, Yar., 2, Mor., 4.

49. T. semipalmatus, Tem. N Am., Sweden. Willet, Bree, 4.

50. T. flavipes, Gm. N Am., England. Yellow-shanked Sandpiper, Yar., 3, Suppl.

51. Scolopax grisea, Gm. N Am., England. Brown Snipe, Yar., 3, Mor., 4.

52. Porphyrio alleni, Thoms. Af., Lucca.

53. Sterna fuliginosa, Gm. N Am., Sooty Tern, Yar., 3, Suppl.

54. Tachypetes aquilus, L. Tropics, Weser. Frigate Bird.

55. Phaeton æthereus, L. Tropics, Heligoland. Common Tropic bird.

56. Larus atricilla, L. N Am., England. Laughing Gull, Yar., 3, Mor., 6.

57. L. rossii, Richardson. N Am., Heligoland. Ross's Gull, Yar., 3, Suppl.

58. L. bonapartei, Thompson. N Am., Ireland. Bonapartian Gull, Yar., 3, Suppl.

59. Procellaria capensis, L. Tropics, France. Cape Petrel.

60. P. hæsitata, Forst. Diabolica, L'Herm. Tropics, England. Capped Petrel, Yar., 3, Suppl.

61. P. gigantea, L. South Seas, Rhine. Giant Petrel. Penn. Arct. Zool.

62. Thalassidroma wilsonii, Bp. Oceanica, Kuhl. Am., England.

63. T. bulweri, Bp. Af., England. Bulwer's Petrel, Yar., 3, Mor., 6.

64. Diomedea exulans. Tropics, Antwerp. Wandering Albatross, Bree, 4.

65. D. chlororynchus, Lath. Tropics, Konsberg. Yellow-nosed Albatross, Bree, 4.

66. Anser hyperboreus, Pall. N Am., Germany. Snow Goose, Bree, 4.

67. A. cærulescens, L. N Am., Prussia, Austria. Blue Goose, Bree, 4.

68. Anas glocitans, Men. Formosa, Georg. N As., France. Clucking Teal, Bree, 4.

69. A. penelope, var. americana, L. N Am., England. American Wigeon, Yar., 3, Mor. 5.

70. A. albeola, L. N Am., England. Buffel-headed Duck, Yar., 3, Mor., 5.

71. A. collaris, Donovan. N Am., England. American Tufted Duck.

ANALYSIS.

Doubtful as to occurrence or species	4
Of undoubted, though more or less of rare occurrence	67
	71
In first list	482
	553

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ERRATA.

VOL. I.

Page 124, seventh line from bottom, for "Boir," read "Boie."
Page 130, among names of Authors, for "Lang.," read "Laug."
Page 178, last line, for "Bonteil," read "Bouteille."
Page 195, twelfth line from bottom, for "Dentsch.," read "Deutsch."

VOL. II.

Page 58, for "Fauna Belge," read "Faune Belge."
Page 97, for "Kerserling," read "Keyserling."
Page 102, last paragraph, for "Locustelle," read "Locustella."
Page 105, sixth line from bottom, for "from," read "form."

VOL. III.

Page 9, third line from top, for "Exhibition," read "Expedition."
Page 24, for "Guldenstedt," read "Guldenstadt;" and again on page 28, fourth line from bottom.
Pages 60, 61, and 62, for "Yellow-headed," read "Yellow-breasted."
Page 163, second paragraph, dele "by Mr. Taylor (ibid, p. 17,) as very abundant in small flocks in Egypt."
Page 175, last line, for "is," read "are."

VOL. IV.

Page 68, for "semipalmata," read "semipalmatus."
Page 138, in *Specific Characters*, for "Beak black," read "Beak orange."
Page 162, first line of second paragraph, for "emerged," read "submerged."
Page 179, fourteenth line from top, for "at," read "in Epirus."

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